

**MacWrite Pro**  
We waited awhile — was it worth it?

**DayMaker 2.0**  
Pastel polishes PIM interface, adds features

**artWorks**  
Deneba marries Canvas, UltraPaint to produce low-end graphics package

See Page 55

## Apple pencils in pen-Mac plans: First model limited to large sites

By Matthew Rothenberg

Cupertino, Calif. — Apple is reportedly looking to ink deals with major corporate buyers for a pen-based Macintosh Duo designed for sale directly to large sites.

The company next month will begin seeding customers with prototypes of the device as part of a massive test-marketing effort that will eventually involve hundreds of prototype units, sources said. Apple hopes to ship its first pen product late this summer, although handwriting recognition may not be available until the end of the year. Sources said the device will probably cost several hundred dollars more than current Duo models.

The pen device is based on a 33-

MHz 68030 processor and can accommodate up to 32 Mbytes of RAM, sources said. Like the existing Duos, the pen Mac can be docked for desktop use, but its keyboard will be a separate, detachable unit.

According to sources, the first model will use the standard Finder along with a "digital-ink" system extension that stores pen strokes as bit-mapped graphics and allows some checklist-style input to applications such as forms programs. The initial configuration will not support handwriting recognition.

According to some sources, Redwood Shores, Calif.-based Communication Intelligence Corp. will

See Pen Mac, Page 127



## Security chips trigger alarm

*Clipper and Capstone open digital back door*

By Mitch Ratcliffe

Washington — The White House and National Security Agency, as part of a wide-ranging retooling of U.S. privacy policies, are preparing two encryption chips for use in the computer and telecommunications industries. Privacy advocates cried foul last week because the chips include a back door that allows police to monitor communications.

The Clipper chip announced this month can encrypt voice and data communications at up to 16 Mbps. Clipper is due to debut in secure telephones from AT&T Co. this summer. The second chip, called Capstone and currently

under development at the NSA, is a superset of Clipper that will implement the much-criticized Digital Signature Standard to add authentication capabilities. Its existence was revealed during a briefing at the Massachusetts Institute of Technology in Cambridge last week.

President Clinton ordered the National Institute of Standards and Technology to establish Clipper as a federal standard. Since the government is the largest computer customer in the world, its Federal Information Processing Standards (FIPS) often are imposed on the industry as de facto standards.

If Capstone follows Clipper into the FIPS requirements, DSS could usurp RSA Data Security Inc.'s public-key encryption scheme, which Apple licensed for

See Security, Page 127

## Novell, Apple team up to launch Mac system into DOS universe

By Mitch Ratcliffe

San Francisco — In a move to prevent Microsoft Corp. from achieving total domination of the corporate desktop, Novell Inc. is putting its credibility with business buyers behind Apple's efforts to bring a version of the Macintosh environment to IBM PCs and compatibles.

Novell plans to introduce an Intel-compatible version of the Mac Finder and Toolbox, combined with Novell's DR DOS operating system and network client software, in the first half of next year.

For Apple the new software will be the first piece in a family of multi-platform technologies collectively called Companion. The project also involves plans for a thorough overhaul of the Mac interface over



the next several years.

The first fruit of the Apple-Novell collaboration, running on Intel 386, 486 and Pentium CPUs, will provide a multitasking environment that will run both existing character-based DOS programs and ported versions of Mac applications. The companies reportedly are

investigating ways to support Windows applications as well, but sources said that problem has not been solved.

Intel Corp. is providing Apple and Novell with technical assistance and compatibility testing, sources said.

The partners have already explained the plan to cross-platform application vendors, and more developers will be briefed at the Apple Worldwide Developers Conference

See Apple-Novell, Page 128

*Windows alternative faces an uphill course*

By Mitch Ratcliffe

San Francisco — The die has been cast for a new era in Macintosh computing, and developers and analysts are beginning to assess the implications and prospects of the Apple-Novell Inc. plan to bring the Finder and Mac Toolbox to Intel-based personal computers.

Apple and Novell reportedly want to pitch the Mac-like operating environment they are developing to two classes of IBM PC and compatible users who are already facing a transition in their computing environment.

First are those who use character-based DOS but are considering moving to a graphical user interface. Since shifting to a GUI in any case requires new applications and training,

See Analysis, Page 127

### Special Report

## Printers

In-depth information on:

600-dpi printers •

PostScript printers under

\$1,000 • LaserWriter

hardware upgrades •

PostScript printer clones

• Portable printers •

Poster printing software

See Page 40

## Motorola claims PowerPC chips will outperform Intel Pentium

By Henry Norr

Austin, Texas — Newly disclosed details about the PowerPC 601 suggest that the new RISC processor could give Apple a significant price-performance advantage relative to Intel-based competitors.

Motorola Inc., which is developing the chip in collaboration with IBM Corp. and Apple, last week announced that it has begun general sampling of 50- and 66-MHz versions of the first member of the new processor family, which is expected to show up in Apple and IBM systems early next year.

According to the Motorola announcement, the 601 will outperform rival Intel Corp.'s much-heralded Pentium processor yet cost system manufacturers significantly less.

Based on initial measurements

with the industry-standard SPECmark92 benchmark suite, Motorola said, the 66-MHz PowerPC 601 is expected to deliver integer performance of 60 SPECint92 and floating-point performance of 80 SPECfp92; the 50-MHz version will offer about three-quarters the performance. A 66-MHz Pentium, according to Intel, scores 64.5 SPECint92 and 56.9 SPECfp92.

Most Mac applications rely primarily on integer routines, but programs that do intensive number crunching, including some graphics software, depend heavily on floating-point performance.

The 50-MHz PowerPC 601, according to the announcement, will sell for \$280 each in volumes of 20,000; the 66-MHz version will be

See PowerPC, Page 127





## MAKE YOUR QUADRAS EVEN FASTER!

QUADRA 700/900 **25% FASTER!**

QUADRA 800 **15% FASTER!**

QUADRA 950 **23% FASTER!**

Get the performance upgrade recommended by ALL the editors... The magazine reviews agree, the 100% compati-

ble FastCache Quadra is the recommended upgrade for every Quadra user. As MacUser says... "if you own a Quadra, you're cheating yourself if you don't

buy a DayStar FastCache Quadra". **You can get even more power from your Mac!** The FastCache Quadra boosts performance in everything you do.

According to MacWEEK... "it provides the oomph you're looking for". You'll get up to 40 percent more performance. It averages a substantial 15 to 25 percent

speed gain all day long! **And it's cost effective too.** In the words of the MacUser Eddy Staff... "the DayStar FastCache Quadra represents an excellent

price/performance value... a simple and inexpensive way to accelerate members of the Quadra family". Simply plug this card in and you're on your way!

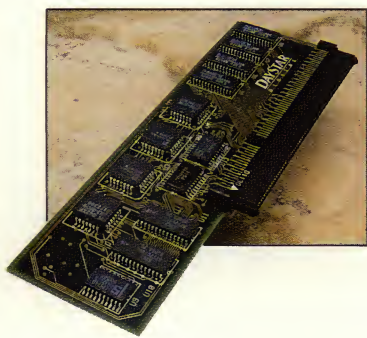
**Choose your card.** MacUser states... "two DayStar FastCache Quadra cards, one for the 700 and 900 (\$299) and one that works in the Quadra 700,

(800), 900 and 950 (\$449) — inexpensive 128K cache cards". **From DayStar, the leader in acceleration.** MacWorld says...

"DayStar pays attention to detail — a good indication of quality". **Even more.** But that's not all, Macworld says it best...

"DayStar has an impressive three year warranty, a toll-free tech support line and... allows you to upgrade to another

DayStar product by paying the difference in list price".



**DAYSTAR**  
DIGITAL

Call for an immediate fax brochure!  
**1-800-532-7852**

DIAL 4 THEN CHOOSE BROCHURE 3003



# New Mac virus set to strike on the next Friday the 13th

## Capable of infecting all kinds of files

By Henry Norr

Hanover, N.H. — Yet another new Macintosh virus — the second this month — has surfaced, and this one apparently is capable of causing serious disruption on infected systems.

Tentatively dubbed INIT M, the virus was discovered at Dartmouth College here. According to early analyses by virus experts, it can infect all kinds of files — including extensions, preference files, documents and applications — but only under System 7.

The virus is designed to go off on any Friday the 13th, when it will change file and folder names and files' type and creator codes to random strings.

File creation and modification dates are changed to Jan. 1, 1904, and in some cases one file or folder

may be renamed Virus MindCrime. The virus reportedly also creates a file called FSV Prefs in the Preferences folder within the System folder on infected disks.

The only Friday the 13th this year is in August.

At press time, commercial, shareware and freeware anti-virus developers reportedly were still working on analyzing the virus and creating search strings and remedies.

Central Point Software Inc. of Beaverton, Ore., said it was about to post an antidote for use with its Anti-Virus utility, and other developers said they were working on the problem.

A joint statement describing the virus and developers' plans to offer remedies was expected to be posted on on-line services, as has become customary when new viruses are discovered.

The new virus apparently is unrelated to the INIT 17 virus discovered earlier this month (see MacWEEK, April 19). □

# QuickTime 1.6 to play movies faster

## Upgrade lets Macs record CD sound

By Nathalie Welch

Cupertino, Calif. — Apple next month will ship QuickTime 1.6, an upgrade that will bring better color, sound and performance to the multimedia software.

The new version will play back movies 10 percent faster than QuickTime 1.5, according to the company.

The improved QuickTime will be added to the System 7.1 upgrade kit, bundled with all new Macs and offered through on-line services and user groups.

The QuickTime revision includes Sound Manager 3.0, an upgrade that lets Macs with third-party cards record and play CD-quality 16-bit sound.

Movie makers will be able to use Sound Manager 3.0 to import sounds from CD sources into a QuickTime 1.6 movie. Apple said it plans to license Sound Manager 3.0 to third-party hardware and software developers.

Support for Apple's color-matching technology, ColorSync, enables QuickTime 1.6 movies to run on different Macs without color changes.

Wider color support, ranging from one-bit black and white to 32-bit color, means movies made with the upgraded multimedia software can be played on a larger variety of Macs, including the four-bit gray-scale PowerBooks and Duos.

In addition, the text-track feature of the previous release has been enhanced with TrueType text support to smooth out the jagged edges of text in resized QuickTime movies.

The new version dramatically reduces the amount of system memory consumed by loading QuickTime. Version 1.6 takes up only 18 Kbytes of RAM when not in use, compared with 160 Kbytes for Version 1.5. Memory needs when the extension is in use, however, have not been reduced.

Apple said it plans to offer the new features of Version 1.6 in its QuickTime versions for Microsoft Windows and Unix but declined to say when.

The Windows client will support Microsoft Corp.'s MCI (Media Control Interface) and OLE (Object Linking and Embedding), according to Apple (see MacWEEK, April 5).

Users can order QuickTime 1.6 for a \$10 shipping fee by calling (800) 769-2775, Ext. 6596. □

## News

- 11 **Toshiba says it fixed Duo drive sleep problem**  
But some users report problems with replacement drives.
- 14 **Start-up puts Macs to the test**  
Company now reaching \$2 million in sales reflects technology choices.

## Gateways

- 20 **Farallon unleashes Ethernet barrage**  
Company says it has caught up to competitors.
- 20 **DCA reveals Avatar support plan**  
Integration scheme calls for aggregate product combining both companies' terminal emulators.

## GA

- 24 **Colorocs tones up CMYK laser**  
PS-compatible device does full-bleed tab pages.
- 24 **PixelCraft readies large-format RGB scanner**  
Pro Imager grabs tabloid-size 24-bit-color images.
- 28 **Tech analysis: Mac scanning software**  
New products look to high end for direction.

## BusinessWatch

- 32 **Asanté pulls away from Mac Ethernet pack**  
Competitively priced products pace brisk sales.
- 32 **General Motors puts brakes on Mac purchases**  
Automaker cites steep maintenance costs, single computer standard for switch to Intel-based machines.

## Opinion

- 36 **Editorial**  
Apple site licensing still out of sight.
- 36 **Commentary/Jean-Louis Gassée**  
It's a numbers game.
- 37 **Letters**  
Two views of MacWrite Pro quality control.
- 37 **Mac Manager/Don Crabb**  
E-mail messages: Crisis or curse?

## Special Report



- 40 **Semiannual printer report**  
MacWEEK looks at new technologies that add features at a lower cost, as well as products that add life to your old printer.

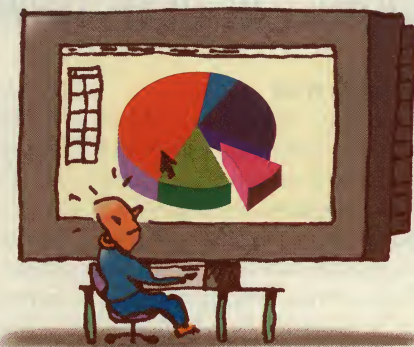
## Reviews

- 55 **Write Pro for the job**  
Claris' long-awaited update worth the wait.
- 55 **One day at a time**  
DayMaker awaits new features, manages time well.
- 58 **Ray Dream adds depth**  
Graphics tool extrudes PostScript art, type.



- 60 **Deneba gives users the artWorks**  
Low-end integrated painting and drawing tool blends Canvas, UltraPaint.
- 61 **Palomar utility is king of the road**  
On the Road moves to a new beat.
- 61 **Reviews Forum: How suite it is?**  
Avid review strikes sour note.

## ProductWatch



- 65 **The big story on large monitors**  
Finding the right monitor means beefing up on specs.
- 72 **MacInTouch/Ric Ford**  
Where will we be at this time next year?
- 72 **Ask David Ramsey**  
I think icon, but I can't.

## Mac the Knife

- 130 **PowerBook prices may never be this low again**  
Re-engineered 145 logic board makes it possible.
- 77 **Ad Showcase** 128 **Advertiser Index**
- 78 **Mail Order** 129 **Product Index**
- 109 **Classified**



# Connectix upgrades PB utility

## Power management enhanced in CPU 2.0

By Raines Cohen and Henry Norr

San Mateo, Calif. — Connectix Corp. this month released Connectix PowerBook Utilities 2.0, an upgrade to its \$99 package of PowerBook utilities.

"I can't think of anything they could have put in but didn't, yet it's infinitely more accessible and easier to use," said Jonathan Crawford, a San Francisco management consultant and CPU 2.0 beta tester. "Now when I move from my office, where I don't care about power usage or security or audio volume, into the field, where those things are critical, it makes the adjustments I want automatically."

Enhancements include:

► **Power management.** Version 2.0 adds control of processor clock speed and more accurately estimates remaining battery life, according to the company.



Connectix's CPU 2.0 includes synchronization functions, enhanced power management and a simplified interface.

► **Interface.** The CPU control panel now lets users adjust all power-management settings with a single slide bar; expert users who want finer control can still go to the separate settings screens used in Version 1.0.

► **Synchronization.** A new system extension modifies Finder dialog boxes to add a "Merge" option, enabling users to synchronize folders on different systems. Users can also save synchronization sets that run at start-up or on command.

► **Network identification.** CPU 2.0 can determine if a user is at a known location and adjust printer and other settings accordingly.

Upgrades are \$19 or, until June 30, free to users who purchased CPU 1.0 after Jan. 1. Users of other PowerBook utility collections can switch to CPU 2.0 for \$19.

Connectix Corp. is at 2655 Campus Drive, San Mateo, Calif. 94403. Phone (415) 571-5100; fax (415) 571-5195. □

# AppleLink adds news, encyclopedia services

By Nathalie Welch

Cupertino, Calif. — When AppleLink subscribers log on this week they will see the first of many new services Apple will offer under its plan to turn the on-line service into a major source of revenue.

These services include the Dow Jones News Service, news briefs from USA Today and a searchable database of Grolier's Encyclopedia. Feature articles, market news and weekly TV listings from Tribune Media Services are now provided, and Reuters is offering headline news and sports.

Ramping up for prospective users of Apple's future mobile-computing products, AppleLink now includes a Mobile Systems discussion area, a weather service, and a travel area to provide users with travel itineraries and lists of events in selected locations.

ZiffNet Selections for AppleLink will also debut this week. The new area offers news, product reviews and

downloadable software from MacWEEK and other Ziff-Davis Publishing Co. publications, including MacUser and PC Week. Unlike ZiffNet on CompuServe Information Service's network, however, the AppleLink area will not include two-way messaging forums.

Although AppleLink is the most expensive on-line service, Apple said it has no immediate plans to revamp its pricing. Current rates are \$37 per daytime hour for 9,600-bps access, and \$12 per daytime hour plus about 5 cents per kilocharacter for 2,400-bps access.

"Over time we will be restructuring pricing to make it simpler and to reflect the value of the information subscribers will be receiving," said Peter Friedman, director of Apple Online Services. Friedman said future AppleLink offerings will be based on more of a cable-TV approach, with subscribers paying to gain

access to just the services they want.

Apple has awarded Stratus Computer Inc. of Marlboro, Mass., a contract to supply its Napa, Calif.-based data center with hardware needed to host future enhanced versions. AppleLink now runs on a General Electric Information Services network.

AppleLink Account Administration is at P.O. Box 10600, Herndon, Va. 22070-0600. Phone (408) 974-3309; fax (703) 318-6701. □

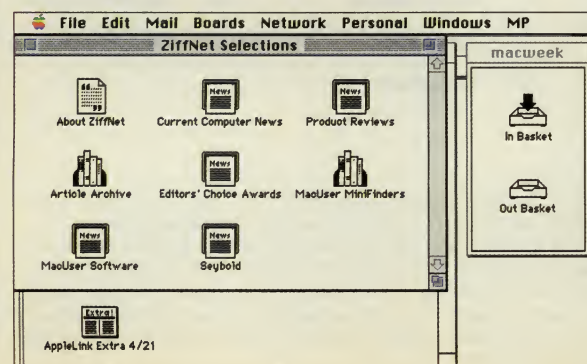
## '040 accelerator ships

Flowery Branch, Ga. — DayStar Digital Inc. this week started shipping what it said is the first 40-MHz 68040-based Mac accelerator.

The 40-MHz Turbo 040, now available in limited quantities at \$2,399, currently fits the processor direct slots of the Mac IIfx and IIsi; the company said it will add compatibility with the SE/30, II, IIfx, IICx, IIVI, IIVx and Performa 600 machines this spring. The card includes FastCache Turbo, a 128-Kbyte secondary cache that lists separately for \$199.

DayStar said it expects the price of the card to decline as the still-scarce 40-MHz CPUs become more available over the course of the year.

DayStar Digital Inc. is at 5556 Atlanta Highway, Flowery Branch, Ga. 30542. Phone (404) 967-2077 or (800) 962-2077; fax (404) 967-3018. □



AppleLink now features ZiffNet Selections, which includes stories and software from MacUser, PC WEEK and other Ziff publications.



## News

### BRIEFS

#### Dayna utility gives users access to NetWare servers

Salt Lake City, Utah — Dayna Communications Inc. last week shipped a new version of its DOS-mounting utility that gives users access to Novell NetWare servers.

The \$99.95 DOS Mounter Plus includes Dayna's NetMounter utility, which give Macs the ability to access NetWare servers by simply clicking a button in the control panel (see MacWEEK, Jan. 11). In addition, DOS Mounter Plus adds support magneto-optical drives and features a new graphical user interface.

Users of DOS Mounter or other DOS disk-mounting utilities for the Mac can upgrade to DOS Mounter Plus for \$24.95.

Dayna Communications Inc. is at Sorenson Research Park, 849 Levoy Drive, Salt Lake City, Utah 84123. Phone (801) 269-7394; fax (801) 269-7363.

#### Likewise bug fix corrects Ethernet driver problems

Campbell, Calif. — Mac users should find it easier to do Likewise now that Apple shipped a bug fix for the software-distribution tool.

The \$129 package, originally developed for use in educational settings, consists of client and administrator applications that update users' software across LocalTalk and Ethernet networks.

The original release was marred by a variety of bugs and compatibility problems, particularly with System 7.1, some Ethernet drivers, and selected file types on client computers. The company said those problems have now been fixed. Likewise is available from Apple resellers or by calling Apple at (800) 950-2442.

#### Suitcase 2.1.3 fixes bug that caused crashes

Baton Rouge, La. — Fifth Generation Systems Inc. this month updated its Suitcase font- and desk accessory-access utility to Version 2.1.3. The new version contains no new features, only a few minor bug fixes, according to the company.

The upgrade fixes a bug that could cause crashes when both System 7.1's enabler mechanism and Adobe Systems Inc.'s Adobe Type Manager are present when Suitcase loads.

The new version also better detects font conflicts at start-up when the user is running System 7.1, which lets users split a font family among multiple font suitcase files.

Fifth Generation also took a step into the future by making Suitcase compatible with Apple's upcoming AOCE (Apple Open Collaboration Environment), so developers and testers of that package don't have to stop using Suitcase.

An updater application for the new version is available on a number of on-line services and directly from the company.

Fifth Generation Systems Inc. is at 10049 N. Reiger Road, Baton Rouge, La. 70809. Phone (504) 291-7221; fax (504) 295-3268.



# Read my clips.

## THE BOTTOM LINE

The HP ScanJet IIc sets a new standard for affordable color scanners. Its engine is fast and well-engineered, and HP's innovative color-calibration software makes hassle-free, "true"-color scans a reality. Prices at less than \$2,000, the HP ScanJet IIc is a best buy in its class.

Top honors in every scanner category.

## It's blazingly fast!



and black-and-white photos, the ScanJet IIp is an exceptional product. The scanner is just 16 inches long and 10 inches wide.

## WINNING COMBINATION

To test the HP ScanJet IIc, we used the same set of tests we used for our most recent color-scanner lab report. The results showed HP's new scanner to be the best in its class in both hardware and software. The ScanJet impresses from the moment you open the box. Other

scanners use a removable screw that locks the scan head for shipping, but HP uses a locking lever that's built into the scanner itself. There's no screw to lose, and the lever is so easy to use that you'll find yourself locking the scan head more often, thereby increasing its life span.



TOP-NOTCH HARDWARE TEAMED WITH INNOVATIVE SOFTWARE MAKES HP'S NEW COLOR SCANNER A WINNER.

The HP ScanJet IIc uses a one-pass scanning method that makes it one of the fastest color scanners we've seen. It also provides time-saving color previews that dynamically display any changes you make to the scan, such as exposure, hue, and saturation modification.

the scan head, and color accuracy showed the HP ScanJet IIc to be a top performer. In addition to scanning at an optical resolution of 400 dpi, the HP ScanJet IIc can scan at 600 dpi.

## 1992 Diamond Awards

For an all-around scanner offering high-quality color and black-and-white images, true 400-dpi resolution, and good basic scanning software, HP's ScanJet IIc can't be beat.

"We were extremely impressed..."

Hewlett-Packard's ScanJet IIp sets a new standard for affordable desktop gray-scale scanners. From its striking compact design to

We'd hate to brag. So we'll let the Mac press do it for us.

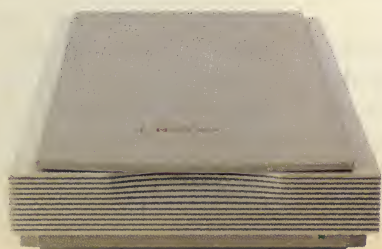
Macworld awarded both the HP ScanJet IIc and IIp their World Class Award, and named the HP ScanJet IIc as the Best Color Scanner for 1992, and the HP ScanJet IIp as the Best Black & White/Gray-Scale Scanner. While MacWeek gave their prestigious Diamond Award to the HP ScanJet IIc.

Speed. Simplicity. And accuracy were all applauded. It's no wonder. HP's single-pass scanning delivers both lightning-fast speed and precise color registration. TWAIN support allows scanning without having to switch between applications. And HP AccuPage technology with 400-dpi resolution can tackle the toughest OCR challenges. What's more, capabilities this advanced have never been this affordable. List price on the HP ScanJet IIc is just

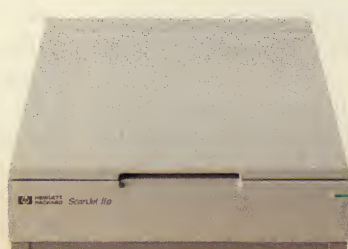
\$1,599. The HP ScanJet IIp is just \$879. And right now, the HP ScanJet IIc includes Adobe<sup>TM</sup> Photoshop LE.

Impressed? Don't just take our word for it, or even the Mac press's. Attend one of our scanning seminars that will be held April through September, 1993. To find out more about the HP ScanJet IIc and IIp or seminars in your area, call 1-800-SCANJET, Ext. 7364\*. And judge for yourself.

HP ScanJet IIc



HP ScanJet IIp



HEWLETT  
PACKARD



## Alysis' eDisk compresses data as it is written to disk

*Company's third entry works at driver level*

By Robert Hess

San Francisco — Alysis Software Corp. this week will toss its hat into the driver-level compression utility ring.

The company said it expects to ship this week eDisk, a \$149.95 data-compression software package that compresses all data written to a user's hard disk and decompresses it when it is read from the disk.

File-level compression programs, including Alysis' own SuperDisk! and More Disk Space, compress individual files. eDisk, on the other hand, compresses all data as it is written to disk.

Alysis joins Golden Triangle Computers Inc., which shipped TimesTwo last year, and Stac Electronics Inc., which promises to ship Stacker for Macintosh this spring, in offering driver-level compressors.

Unlike TimesTwo, but like Stacker, eDisk does not replace the hard disk's own SCSI driver. Instead, eDisk compresses data as it is transferred from the Mac's file manager to the disk's SCSI driver.

This gives users the ability to choose any SCSI driver they wish and to take advantage of their drivers' special features, such as partitioning, mirroring and error detection.

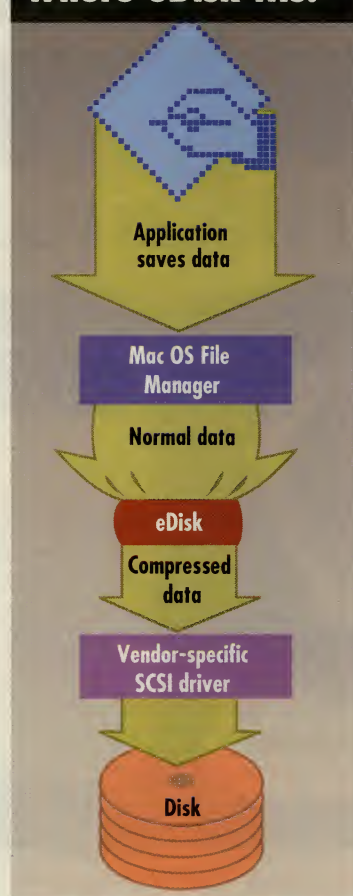
Like its driver-level competitors, eDisk avoids the usual block-allocation limits in the Mac's hierarchical file system to better utilize the space on a disk. Ordinarily, the system divides large hard disks into relatively large minimum-size blocks. When a file smaller than a disk's block size is written to disk, the unused space in the block is unavailable to other files and effectively lost. Alysis said eDisk customizes block allocation to suit each file's needs, further enlarging effective disk capacity.

eDisk's installer lets users choose among several compression ratios: 2-, 3- or 4-to-1. The higher compression rates slow performance and depend on the type of data being compressed.

eDisk comes with a built-in disk optimizer. Users can configure it to begin working automatically after a preset period of inactivity or manually run it through the eDisk installer.

Volume licenses are priced at

### Where eDisk fits:



\$67.50 per copy for three to 100 copies, \$60 per copy for 101 to 499 copies and \$49.50 per copy for larger quantities.

Alysis Software Inc. is at 1231 31st Ave., San Francisco, Calif. 94122. Phone (415) 566-2263; fax (415) 566-9692. □

## MicroNet brings Raven disk arrays to Quadra 800, adds Bernoulli 150

By Henry Norr

Irvine, Calif. — The Raven this month alighted on Apple's latest high-end Mac.

MicroNet Technology Inc. is now shipping its Raven disk arrays in seven capacities for the new Quadra 800. The Raven-800 systems consist of a matched pair of external drives, one connected to the Quadra 800's single built-in SCSI port, the other to MicroNet's new high-speed SCSI host adapter, the NuPORT-III. They offer sustained data transfer rates of up to 9.2 Mbytes per second and access times of as little as 4 milliseconds, according to the company.

Raven-800 configurations range from the Q8e/e-1030R, with a total capacity of 1 Gbyte and a suggested retail price of \$4,090, to the Q8e/e-5560R, a \$14,490 array with a capacity of 5.56 Gbytes.

MicroNet also added Iomega Corp.'s Bernoulli MultiDisk 150 to its line of removable-media storage systems. The external MicroNet

SBS-B150 lists for \$1,245, including one 150-Mbyte cartridge; additional cartridges are available from MicroNet at \$245 each, \$665 for a three-pack and \$799 for a five-pack.

In addition, the company said it has begun shipping the Archive DiamondBack, a digital audio tape drive and auto-loader (see MacWEEK, Jan. 4). The full-height external unit, now priced at \$6,495, is based on the new Archive Turbo Python mechanism, which has built-in compression. The standard version can hold four DAT cassettes, but the capacity can be increased to 12 cassettes with an optional magazine priced at \$295.

The auto-loader ships with four 90-meter tapes and Dantz Development Corp.'s Retrospect Remote 2.0, including a copy of the Retrospect application and three network clients.

MicroNet Technology Inc. is at 20 Mason, Irvine, Calif. 92718. Phone (714) 837-6033; fax (714) 837-1164. □

## Rosanne package set to script Mac data-processing functions

*Six utils clean data, translate formats*

By Raines Cohen

Washington — A set of Mac utilities that allows scriptable batch processing of large data files such as mailing lists and transaction files is due next month from publisher Main Event.

Called Rosanne, the package consists of six utilities that can clean data, convert formats and prepare data for loading into another program. As they work, the utilities can generate subsets of selected records, count records by category and perform other analytical operations.

All the programs operate on plain-text files and route output to a separate file so the original data remains untouched. The record structure is stored separately from the files so any disk-based text editor can be used to inspect and adjust the data.

The company said Rosanne handles most standard mainframe data types, including character text, display integers, binary integers, display real numbers, single- and double-precision real numbers, and packed decimal numbers.

All the programs can be used interactively by selecting fields and operations in dialog boxes. User operations can be saved as AppleScript scripts, which can be run later for repeated or batch-processing operations. In addition to AppleScript, compatible languages compliant with Apple's Open Scripting Architecture can drive the programs.

Rosanne will sell for \$495 to \$695, depending on configuration. The scripting functions require System 7, AppleScript and 4 Mbytes of RAM, but the programs can run with 2 Mbytes and under System 6.0.2 or later.

Main Event is at 1814 Belmont Road N.W., Washington, D.C. 20009. Phone (202) 298-9595; fax (703) 551-5155. □

## ABSI-Docs helps workgroups manage documents

By Kirsten L. Parkinson

Minneapolis — Antley Business Systems Inc. this month released a \$5,495 program designed to help users manage documents and projects shared in workgroups.

ABSI-Docs, a client-server system running a Helix Express database on a dedicated Mac, combines document-management, work-flow and project-tracking capabilities.

Features of ABSI-Docs include:

### ► Document management.

ABSI-Docs stores documents on the server and downloads a specific file to a user's machine when selected. Compressed documents are

decompressed on the fly as they are downloaded.

Users can make changes and then return a new copy on the server. The program automatically records how long the user spent on the document and saves revised versions in an archive.

### ► Work-flow management.

Managers can assign tasks to users, and the assignment will automatically appear on the user's to-do list with any notes. When users have finished their portion of the task, they can forward it to another user.

Antley Business Systems said it will also customize the program to

create automatic routes for projects, allowing managers rather than users to determine where each document should be routed after a user has worked on it.

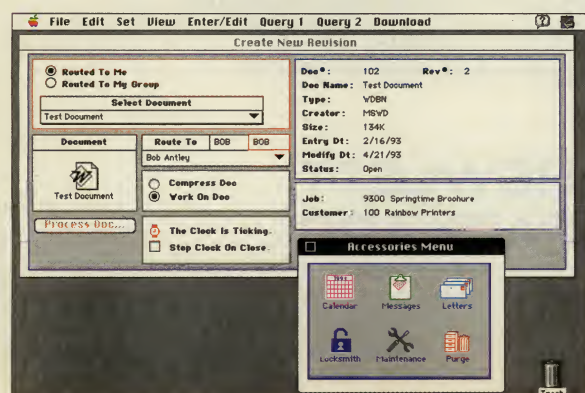
► **Project tracking.** ABSI-Docs records who has any particular document, who has already worked on it and how much time has been spent on it. The program includes several report forms. Users can export project data to other programs in ASCII text, or SYLK or DIF (Data Interchange Format) formats.

Other features of ABSI-Docs include electronic mail, individual calendars for each user and four levels of password protection. A mail merge capability lets users create quick documents using a database of boilerplate text.

ABSI-Docs' price does not include the Helix multi-user database, which costs about \$150 per user.

Antley Business Systems Inc. is at 5217 Wayzata Blvd., Suite 213, Minneapolis, Minn. 55416. Phone (612) 542-9651; fax (612) 542-9665. □

**ABSI-Docs provides a document-management system allowing users to electronically route files to other users on the network.**



### For the record

A chart listing SCSI Ethernet adapters in the April 19 issue omitted information regarding Focus Enhancements Inc.'s devices. Focus' EtherLAN SC supports thick media in addition to the thin mentioned, while the EtherLAN SC-T supports 10BASE T in addition to thin net.



# OUR NEW POWERBOOK MODEM LEAVES GLOBAL VILLAGE SPEECHLESS.

**S**top! *Don't do it!*  
Don't buy an everyday modem when for a few dollars more, you can get the one that turns your PowerBook into a complete communications center.

Applied Engineering's DataLink PB™ lets you send and receive data and faxes, just like Global Village's PowerBook modem. But only the DataLink gives you a powerful competitive edge where you *really* do business: on the telephone.

When you're making calls, your PowerBook becomes a turbo telephone/speakerphone. Right on the screen is your personalized phone number listing with quick dial and a point-and-click keypad. You can take on-line notes or check files and records as you

talk. Your PowerBook will identify callers as calls come in,\* and keep complete records of all your calls. *It's like having a personal secretary right in your PowerBook.*

When you're away or busy computing, your PowerBook will act as an intelligent answering machine. Delivering individualized messages to various callers, and storing their responses for retrieval at your convenience. You can even change and retrieve messages from a remote location.



## DATALINK PB™: THE *FIRST AND ONLY* POWERBOOK™ MODEM THAT HANDLES DATA, FAX AND TWO-WAY VOICE COMMUNICATIONS!

	14,400 S/R Fax & Data	MNP 10 Error Control	Standard Phone & Speaker Phone	Electronic Voice & Fax Phone Dialer	Digital Answering Machine	Voice Messaging	Voice & Fax Activity Log	Personal Note Taker
Applied Engineering DataLink PB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Global Village PowerPort Gold	No	No	No	No	No	No	No	No

And the all-in-one dashboard screen makes everything as easy as "point and click."

You'll enjoy other state-of-the-art features too. Like a superfast 14,400 bps transmission speed. MNP-10 for trouble-free transmissions. AppleTalk Remote Access compatibility. And FAXstf software, for special fax features like group and time-delayed faxing.

Plug in our optional Axcell™ Portable Cellular Interface and a cellular phone, and your communications center works *anywhere*. Taking messages in the next room while you visit with a client, sending faxes from your car, and more.

With the DataLink PB installed, you'll be in complete control of all your communications – and your business day. No wonder MacWEEK said "Don't leave home without it."

**CALL FOR FREE PRODUCT GUIDE  
1-800-554-6227, ext. 405**



**APPLIED ENGINEERING®**  
*The Macintosh Enhancement Experts.*

3210 Beltline, Dallas, TX 75234, 214-241-6060

\*Where Caller ID is available. ©1993. AE Research, Inc. All rights reserved. Brand and product names are registered trademarks of their respective holders. All specifications, terms and descriptions of products and services are subject to change without notice or recourse.





# Apple and a higher standard

Introducing the LaserWriter® Pro 600 and 630 printers from Apple.

Never before have workgroup printers this affordable produced this level of output.

Offering you true 600-dot-per-inch resolution, they deliver more than four times



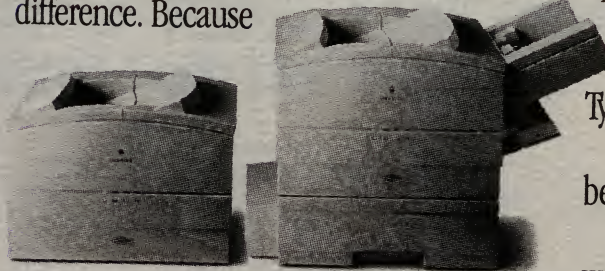
*The LaserWriter Pro 600 and 630 feature PhotoGrade, an Apple breakthrough allowing you to print up to 91 levels of gray—that's 35% more grays than with our award-winning LaserWriter IIg.*

A process that intelligently adjusts the size and position of every dot in relation to neighboring dots, allowing you to print up to 91 levels of gray at 300 dpi.

That's equivalent to a 1,000-dpi printer costing mountains more.

The result is noticeably sharper details and the ability to reproduce the subtle tones of gray in black-and-white photographs.

But even when you don't integrate photos into your documents, you'll still notice the difference. Because



*Both LaserWriter Pro models come with two paper trays and a host of paper-handling options, including a 500-sheet feeder and a 75-envelope feeder.*

the definition of comparably priced 300-dpi printers.

Both models incorporate an Apple breakthrough in gray-scale printing called PhotoGrade.™

A process that intel-



Apple's FinePrint™ technology gives your text and line art cleaner edges and smoother curves. So your TrueType™ and PostScript™ Type One fonts have never had more impact. Any way you look at it, your work looks better coming out of a LaserWriter Pro.

Two paper trays come standard, along with an array of options including a 500-sheet feeder and a 75-envelope feeder for a total paper-handling capacity of 850 sheets.

©1993 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, LaserWriter, Macintosh and "The power to be your best" are registered trademarks, and FinePrint, PhotoGrade and TrueType are registered trademarks of Hewlett-Packard Company. Windows is a registered trademark of Microsoft Corp. \*J.D. Power and Associates® 1992 Computer End User Satisfaction Study, Printers. Study conducted



# nounces of laser printing.



able to move even the largest, most complicated image files and print them at speeds rivaling any RISC-based printer.

And if you happen to work in a mixed environment, both LaserWriter Pro models fit right in. They support PCL page description language and can easily accept jobs from Macintosh® and Windows-equipped computers simultaneously.

They also provide you with something that no other printer in the world can: Apple's renowned plug-and-play simplicity.

#### LaserWriter Pro 630 vs. HP LaserJet 4M

Gray levels:	91	51
Macintosh fonts:	64 TrueType	None
	35 PostScript	35 PostScript
PPM:	8	8
Ethernet:	Built in	Optional
RAM:	8MB	6MB

In fact, Apple® LaserWriter printers were recently ranked highest in Overall Laser Printer Customer Satisfaction by J.D. Power and Associates\*. Outranking Hewlett-Packard.

To see why, visit your authorized Apple reseller for a full demonstration.

You'll find that the LaserWriter Pro has the power to elevate your work to a level ordinary printers can only aspire to.

The power not just to look your best. The power to be your best.®

## The new LaserWriter Pro series from Apple.

are trademarks of Apple Computer, Inc. Adobe, PostScript and the PostScript logo are trademarks of Adobe Systems Incorporated, which may be registered in certain jurisdictions. Hewlett-Packard, LaserJet and PCL among 1,707 business end users at 848 business sites. \*Manufacturer's suggested retail price. Actual output size 8 1/2" x 11". This ad was created using Macintosh personal computers and Apple LaserWriter printers.



## Focus jumps into accelerator race

By Raines Cohen

Woburn, Mass. — Focus Enhancements Inc. last week announced a line of Mac accelerator cards that include SIMM slots for memory expansion.

The company is offering the Focus TurboCards for the Mac Classic, SE and

LC II as well as NuBus-equipped systems.

The Mac SE and Classic cards include either 25- or 40-MHz 68030 processors and support an optional \$50 FPU (floating-point unit). Both allow users to add up to 16 Mbytes of 80-nanosecond SIMMs, using old-style 30-pin SIMMs.

The Mac LC and NuBus accelerator cards include a 25-MHz 68040, or for the NuBus card, a 33-MHz option. The processor direct slot LC card does not include any additional SIMM slots, unlike the other cards.

Prices range from \$439.99 to \$1,899, depending on configuration. For instance, a 25-MHz '030 card for the Mac SE or Classic is priced at \$439.99; an '040-based NuBus card is priced at \$1,499 in a 25-MHz version and \$1,899 in a 33-MHz version.

Focus said it is manufacturing the cards itself, not reselling another company's products. The company is best known for its line of networking products, such as EtherTalk network-interface cards and hubs and AppleTalk Remote Access servers, but it is expanding its line to include a full range of Mac add-ons and peripherals.

Focus Enhancements Inc. is at 800 W. Cummings Park, Suite 4500, Woburn, Mass. 01801. Phone (617) 938-8088 or (800) 538-8866; fax (617) 938-7741. □

## Media Vision bundles CD drive, speakers

By Kirsten L. Parkinson

Fremont, Calif. — Media Vision Technology Inc. this month released a multimedia package for the Mac that bundles a CD-ROM drive, speakers and CD titles.

The \$899 CD-ROM Multimedia Kit includes a Sony drive offering an average access time of 295 milliseconds and a data transfer rate of 300 Kbytes per second.

The bundle also comes with a speaker system from Labtec Enterprises and FWB Inc.'s CD-ROM ToolKit, which provides drivers and caching capabilities for the drive (see MacWEEK, April 12).

Three CD titles, Compton's Multimedia Encyclopedia from Compton's NewMedia Inc. and Interplay Productions' Battle Chess and Out of This World, are included in the package.

Media Vision this month also introduced its Captain Crunch technology, allowing users to perform real-time video compression and decompression on their IBM PCs and compatibles. The technology, which will be available to developers this quarter, will support video playback on a Mac IIci or more powerful CPU as well as on PCs.

Media Vision Technology Inc. is at 3185 Laurelview Court, Fremont, Calif. 94538. Phone (510) 770-8600 or (800) 348-7116; fax (510) 770-9592. □

## Compaq cuts price on 20-ppm printer

Houston — Compaq Computer Corp. this month rolled back prices 16 percent on the Pagemarq 20, the company's 20-page-per-minute laser printer.

Although it declined to provide list pricing, Compaq said the printer is now available for a street price of about \$3,599. The company also said it has cut the street prices of options such as memory upgrades and LocalTalk and other network interface cards by up to one-third.

Compaq last month cut the cost of the 15-ppm Pagemarq 15 by a similar margin, to a street price of about \$2,599.

Both printers handle pages up to tabloid size and have a resolution of 800 by 400 dpi. The Adobe PostScript Level 2 printers were the first to offer a PostScript fax option. Each includes an AMD 29000 RISC chip and can handle up to five simultaneously active interfaces.

Compaq Computer Corp. is at 20555 State Highway 249, Houston, Texas 77070. Phone (713) 370-0670; fax (713) 374-1740. □



OR



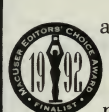
**HOW TO BE NEAT,  
PRECISE AND ORGANIZED.**

**WITHOUT BECOMING ONE OF THOSE  
OBNOXIOUS PEOPLE WHO ARE NEAT,  
PRECISE AND ORGANIZED.**

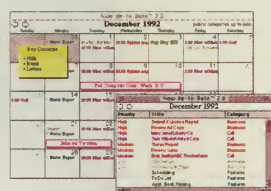
Step 1: Load Now Up-to-Date 2.0, the software that lets you schedule events, set reminders, manage To Do lists, print calendars and keep your associates informed, allowing you to become disgustingly organized.

Step 2: Notice how incredibly easy Now Up-to-Date is to use. Totally customizable. 100% non-fascist. Just click on a date, enter your info, bang, you're done.

Step 3: Think to yourself, "Wow, calendar software that's actually faster and easier than the old pen and appointment book approach. Amazing."



Step 4: If you are on a network, share events from



Now Up-to-Date lets you schedule appointments and To Do's instantly—just click on the date you want and then enter your information.



Calendars can be printed in all major appointment book sizes and formats, in a wide variety of views and styles. You can even print out wall charts.

your calendar with the other folks on your network. In return, they'll no doubt share meeting dates and whatnot with you. Not on a network? No sweat, Now Up-to-Date still works fine all by itself.

Step 5: Fly to Zimbabwe and bring up your calendar on your PowerBook. Good. Now change everything. Perfect. Now connect to your office via modem. Presto! All your calendars automatically update themselves.

Step 6: Pick up Now Up-to-Date 2.0. Or, for more info, call us at 1-800-237-3611.

Step 7: Quit goofing around reading software ads and get back to work. You've got a lot of stuff to do.





## Focus, Envisio, Mirror readying versions of SyQuest 3.5-inch drive

By Kirsten L. Parkinson

San Francisco — Riding the 3.5-inch SyQuest wave, three storage vendors next month will ship their versions of the new removable-media drive.

With a capacity of 105 Mbytes per cartridge, the drive mechanism offers an average access time of 14.5 milliseconds and a sustained data transfer rate of 1.7 Mbytes per second. All three vendors will include a cartridge with the drive.

► **Focus Enhancements Inc.** is preparing two models of the drive in a vertical configuration. The \$799.99 Focus 105R will include a single mechanism; the \$1,499 Focus 105R Duet will combine two of the drives in one enclosure.

The drives will be available directly from the company in black or platinum. They will ship with a collection of utilities from Datawatch Corp. and Golden Triangle Computers Inc., including Virex and Disk-Maker, respectively. Additional cartridges

will be \$79.99; a three-pack lists for \$229.99.

► **Envisio Inc.** will offer a \$999 model of the SyQuest drive as part of its SmartStack line of modular, stackable storage devices.

The SmartStack system lets users connect multiple SCSI devices in a vertical stack with a single cable and power supply.

Additional cartridges will list for \$119.

► **Mirror Technologies Inc.** will ship a \$699 external model of the 3.5-inch drive. It will come with a one-year warranty. Additional Mirror cartridges are \$99.

Focus Enhancements Inc. is at 800 W. Cummings Park, Suite 4500, Woburn, Mass. 01801. Phone (617) 938-8088; fax (617) 938-7741.

Envisio Inc. is at 2640 Patton Road, St. Paul, Minn. 55113. Phone (612) 628-6288; fax (612) 633-1083.

Mirror Technologies Inc. is at 2644 Patton Road, Roseville, Minn. 55113. Phone (612) 633-4450; fax (612) 633-3136. □

## Toshiba wakes late-sleeping PowerBook drives

By Kirsten L. Parkinson

San Francisco — Is it safe to put a Toshiba 213-Mbyte drive in your Duo? The answer depends on whom you ask.

The Disk Products Division of Toshiba America Information Systems Inc. last month recalled some of its 2.5-inch, 213-Mbyte drives for the PowerBook, citing problems with the model's standby mode.

According to the Irvine, Calif.-based company, certain PowerBook models power the drive down to 3 volts instead of zero volts when putting it in standby mode. When the drive powers up again from 3 volts, it may not implement the proper reset function, the company said, making the drive fail to wake up.

Toshiba representatives said the problem has been corrected and that fixed drives have been shipping since last month. Fewer than 500 drives were affected by the problem, according to the company.

"Toshiba has been very, very forthright about the problem," said Paul McGraw, vice president of APS Technologies Inc., a storage vendor in Independence, Mo., that carries the drive. "It fixed the problem in an incredibly

short period of time."

Some users, however, said they have had difficulty replacing faulty drives because some Toshiba drives continue to have problems.

John Servais, owner of NorthWest House, a consulting firm in Bellingham, Wash., said he ordered two of the Toshiba drives but had to return one when it did not wake up after system sleep. He was unable to get a replacement drive from his regular distributor, however, because the company continued to receive faulty drives from Toshiba, he said.

Servais said he eventually turned to another reseller for a working drive, but his first try with that company produced another drive with the same problem.

"What's obvious is that there was a mess of bad drives going out there, and Toshiba was aware of it but wasn't doing what we expect it to do," he said. "It's causing a hell of a problem."

Servais said he is now on his third drive, and it seems to be working so far. "I hope I have a good drive, keeping in mind that it's still a Toshiba drive. It cost us \$150 more than the first one, but we don't care. We just want a drive that works." □

## Hardware That Fits launches line of storage units

By Ian G. Jacobs

Conroe, Texas — Hardware That Fits last month introduced a new line of storage products, and to commemorate the occasion it is bundling Now Software Inc.'s Now Utilities with its drives through May.

The mail-order hardware reseller has marketed other vendors' drives in the past, but this is the first time it has offered storage devices under its own RealTech label.

The new series includes systems from a long list of vendors. Hard drive offerings range from a 40-Mbyte Maxtor internal drive priced at \$269 to a 3.6-Gbyte Micropolis external unit.

Removable-media options include SyQuest, Iomega, floptical and magneto-optical drives, and tape backup systems.

All drives will ship with System 7.0.1; RealTech Drive Utilities, a formatting, diagnostic and driver package based on Transoft Inc.'s SCSI Director; and a shareware collection.

Hardware That Fits provides toll-free technical support, a 30-day money-back guarantee, and repair or replacement of certain models of failed drives within 24 hours.

Hardware That Fits is at 610 S. Frazier, Conroe, Texas 77301. Phone (409) 760-2400 or (800) 364-3838; fax (409) 539-4141. □



## BRUSHSTROKES. FOR JUST \$99, YOU CAN REDECORATE YOUR WORK SPACE.

*(frame not included)*

Introducing the first truly powerful, 32-bit color painting program that's priced for the struggling artist. BrushStrokes™ from Claris Clear Choice™.



With BrushStrokes' step-by-step art lessons, even a novice can create a masterpiece.

It's so easy, you can start painting right away without having to learn a complicated program. And it's loaded with hi-end features to satisfy even the most demanding artist.

It even comes with a clip art library. Try BrushStrokes for just \$99\* (We guarantee your first impression will be a good one.)



Visit your Claris® dealer or call 1-800-544-8554 to find out about our special trade-in offer.



# Apple unleashes Desktop Seminar Toolkit

*CD-ROM simplifies multimedia authoring*

By Henry Norr

Cupertino, Calif. — Apple USA's training department next month will ship a CD-ROM-based authoring system designed to take some of the hassle out of making fancy multimedia presentations.

Called Apple Desktop Seminar Toolkit, the \$299 package is aimed at trainers, teachers, consultants, sales reps and others who are not multimedia professionals but need to create attention-grabbing presentations or seminars in the program's terminology. Based on HyperCard, it provides templates where users can create an outline, enter text and organize additional elements, including graphics, audio and QuickTime movies.

Seminar developers can build in interactive exercises for end users, such as multiple-choice tests or matching games that involve dragging graphics. The disc includes a seminar on creating seminars, as well as a cost-estimation module.

Knowledge of HyperTalk scripting is not required; users can create their presentations entirely with



The Apple Desktop Seminar Toolkit, a CD-ROM-based multimedia authoring system originally developed for internal use at Apple, will be released next month.

menu commands and buttons, according to the company. Familiarity with QuickTime is recommended for users who wish to add video clips.

Stacy Vance, a Mac instructor at Liberty Mutual Insurance Co. of Portsmouth, N.H., evaluated a pre-release version of the disc and recommended it for producing computer-based training (CBT) materials. "It will be really nice for our CBT devel-

opment team," she said. "Our main focus is sales training, and this will let us do things such as create electronic study materials that include film clips of top-notch sales people in action."

The Apple Desktop Seminar Toolkit will be available through Apple resellers, the Apple Catalog and the Apple training group's distribution arm, which can be reached at (800) 950-2442. □

## New IntelliTalk word processor can talk back to users

By Lisa Picarille

Richmond, Calif. — What do your mother, your spouse, your kids and IntelliTools Inc.'s IntelliTalk word processor have in common? They can all talk back to you.

IntelliTools, previously called Unicorn Engineering, this month shipped a word processor that can read words, sentences and paragraphs aloud after they are typed.

Called IntelliTalk, the \$39.95

program is aimed at disabled users, as well as very young students and those learning English. It lets users hear the words they entered to verify the text.

The program, which requires Apple's MacInTalk text-to-speech system extension, maintains a dictionary of pronunciation exceptions to more accurately pronounce words that sound different from the way they are spelled.

Users can add words to the exceptions table by entering the correct spelling of the word and then spelling the word phonetically.

IntelliTalk offers two interfaces. The Picture Menus mode, aimed at novice users, includes more than 200 symbols that graphically depict the function of each menu selection. Standard Menus gives users a more traditional Mac menu bar that offers more choices for manipulating type style and size.

The company also sells an Apple II version of the program, which requires an external speech synthesizer. Both are designed to work with the company's IntelliKeys keyboard.

IntelliTools Inc. is at 5221 Central Ave., Suite 205, Richmond, Calif. 94804. Phone (510) 528-0670; fax (510) 528-2225. □

## Telepathic 2 speeds word prediction

By Ian G. Jacobs and Henry Norr

Edmonton, Alberta — Madanta Communications Inc. next week will ship a rewritten version of Telepathic, its word-prediction software. Version 2.0 features a more flexible interface, improved performance and new sound support.

The \$295 program can guess either the rest of a word being typed or the next word. Predicted words are selected from lists supplied with the package, supplemented by user-imported words and others the program learns by observing the user's writing. Predictions are ranked on the basis of frequency and context.

Users can define word lists for specific topics or languages, such as a list of biology-related words for use in lab reports. Multiple lists can be open at once.

With the new version the suggestion list, updated as the user types,

can be displayed in any font or size in a floating foreground palette; the user can select the desired word with the mouse or keyboard.

Word completion and next-word prediction are dramatically faster than in the original release, Madanta said. Other enhancements include audio playback of letters, words or lists; automatic abbreviation expansion or speaking; and support for single-byte foreign languages such as French and Spanish. Full support for WorldScript and AppleScript will be added soon, the company said.

Upgrades are \$50, or free to users who bought Version 1.0 in the past six months.

Madanta Communications Inc. is at Advanced Technology Centre, Suite 209, 9650 20th Ave., Edmonton, Alberta T6N 1G1, Canada. Phone (403) 450-8926 or (800) 661-8406; fax (403) 428-5376. □

## News

### BRIEFS



#### Cartesia ships disc of world maps

Lambertville, N.J. — Cartesia Software (formerly MicroMaps Software Inc.) last month shipped a CD-ROM version of its collection of detailed maps.

The \$299 MapArt World Data Bank contains maps of every country in Adobe Illustrator format. All maps reflect the upheavals and border shifts of the last few years, according to the company.

Users of the floppy disk version can upgrade for free to the disc.

Cartesia also bundled all of its previous MapArt CD-ROM titles (see MacWEEK, Aug. 3, 1992). The \$379 MapArt Bundle contains volumes of the USA & International, US States, Global Perspectives Maps and Metro Areas CD-ROMs.

All maps in the bundle are in Encapsulated PostScript format. The CD-ROMs not sold in the bundle contain images in both Encapsulated PostScript and PICT formats and cost \$179.

Cartesia Software is at P.O. Box 757, Lambertville, N.J. 08530. Phone (609) 397-1611 or (800) 334-4291; fax (609) 397-5724.

#### Capital cuts price of debt-collection program

Greig, N.Y. — Capital Transactions this month released an update to its debt-collection program and cut the price in half.

The \$995 Total Collections 1.7, formerly \$1,995, presents on-screen scripts to help debt collectors make phone calls to debtors, providing suggested reactions to 10 common responses from debtors.

The HyperCard stack can dial work and home phone numbers and mail-merge addresses to send collection notices. Users can generate reports with the five included Microsoft Excel templates.

Total Collections can import data from Excel and ASCII text files. Users can sort and search records to track down debtors that owe on more than one account.

Capital Transactions is at Star Route 50, Greig, N.Y. 13345. Phone (315) 348-8551.

#### Education manuals aimed at corporate instructors

Columbia, Md. — Tectrix Inc. last month released a series of educational manuals aimed at the corporate instructor.

The company's guides, previously available only on a contract basis, cover basic Mac software, including WordPerfect and Microsoft Works. The company also offers manuals for several other classes of products.

Each manual is \$20. Site licenses are \$600, and volume discounts are available.

Tectrix Inc. is at 10320 Little Patuxent Parkway, Columbia, Md. 21044. Phone (410) 715-1300 or (800) 832-8749; fax (410) 715-1302.



## What do you get when you have...

6-10 interviewers working from 6am to 4pm Monday through Friday...

with

1 supervisor, 2 project coordinators and 2 data entry people

and

1 data analyst

for

1 reputable, independent research company

using

10 phone lines, an 800 number and 2 fax machines

over

8 weeks

making

13,000 phone calls

in spite of

2,008 voice mail detours, 762 phone number look-ups, and 470 busy signals

resulting in

1,400 file folders

holding

112,000 sheets of paper? You get...

*The 1993*

# MacWEEK

# 200

Coming in the May 24 issue of MacWEEK!  
The annual list of the top 200 Mac installations in the U.S. and Canada. And the top 50 educational sites. Find out what over two months of research has uncovered in this exhaustive MacWEEK survey!  
MacWEEK's exclusive feature takes a look at the companies – and industries – banking on Mac technology to take them into the next century.

The annual MacWEEK 200 is the most anticipated issue of the year. Don't miss this special report on the buying trends of the biggest Mac sites in North America... with an in-depth profile of the top five corporate sites and the top five educational sites.

**Issue Date: May 24**

**Advertisers Note:**

**Display advertising close is Thursday, May 13. Showcase close is May 11.**

**Special Bonus Distribution:**

**Comdex/Spring, Atlanta**



## Management

# Rapidly growing start-up puts its Macs to the test

*Running a small business from the Mac is not all plug and play.*

By Mitch Ratcliffe

When Bill Rosenzweig left the world of high technology to start his tea company, he took his Macintoshes with him. Now he's wondering if the Mac is up to the book-keeping and communications challenges he faces in a rapidly growing business.

The Republic of Tea Inc., Rosenzweig's specialty tea company based in San Rafael, Calif., opened its doors in January 1992. The first products, 26 different teas and herbs, shipped in May that year. Since then, the Republic's monthly orders have grown 1,500 percent, and the company may reach \$2 million in sales this year, more than a year ahead of schedule.

"I started this business in my basement with my Mac and a fax modem," Rosenzweig said as he poured several cups of the Republic's new Rainforest Tea. The former president of San Francisco-based Clement Mok Design, he bootstrapped the Republic using four of his own Macs. "You need to have an infrastructure in place that will accommodate your growth, and I'm not sure that we chose the right computers," he said.

The company, which he started with Banana Republic Inc. founders Mel and Patricia Ziegler, was launched with only three employees: Rosenzweig, an office manager and an assistant. The original business plan, published recently as part of a book about the company's founding, called for the hiring of two additional people after one year and recruitment of a controller after two years. Nine months into the Republic's life, it employed seven full-time workers and another half-dozen part-timers.

From the very beginning, the Republic has relied on computers to automate the simple, repetitive tasks that can take up large portions of an employee's day. "We will use technology to work smart," Rosenzweig wrote to the Zieglers during the planning stage of the start-up.

Every new employee must have basic computer skills, Rosenzweig said. He has acted as administrator for the Republic's electronic-mail system, QuickMail from CE Software Inc. of West Des Moines, Iowa, which each employee is required to use religiously. "E-mail must be read and responded to every day; communication is critical to our

success," he said. Macintoshes have eased some of the burden of training new hires; QuickMail introductions always go quickly, he said.

At the same time, technology has been a stumbling block in the implementation of the company's motto, which advises that life and work should be taken sip by sip rather than gulp by gulp.

"We have staff meetings about the zen of efficiency in movement, but one of the biggest wastes of time is all the waiting for the computer," Rosenzweig said. The Republic uses Database Accounting Library from SBT Accounting Systems Corp. of Sausalito, Calif., to track the accounts of 700 retail and catalog customers. "It can take an hour just to generate weekly reports."

## IIsi or NetWare server?

Accounting software has been a particularly sticky point for the Republic. Its entire operation revolves around SBT's software, which is based on Microsoft Corp.'s FoxBASE+. The system, which until recently ran on a Mac IIsi, tracks customer orders, an inventory that includes hundreds of teas and herbs, and shipping information.

Employees in the Republic's warehouse and accounting department complained that SBT is too slow.

An SBT client running on a IIsi workstation in the Republic's warehouse is outperformed by the ancient Southall and Smith Ltd. tea packaging machine, a 15-foot-tall iron and glass contraption that uses brass weights to control the volume of teas in a package. The old tea machine works quickly and is easy to reset for different teas.

Generating a shipping order and invoice, by contrast, can take as long as five minutes and has delayed processing of customer orders until after the last Federal Express drop-off of the day.

A Novell NetWare server was recently installed. The SBT server was the first application migrated to the IBM PC clone.

"Performance has really improved," said Robert Lally, minister of the interior for the Republic. He manages the company's books and supervises the processing of orders. "Backing up the server used to take an hour. Now it takes five minutes," he said.

The improvement may be the result of changes in the server back-



JAMIE TANAKA

up configuration. Instead of backing up all 50 Mbytes of the company's files and applications to a digital audio tape drive, the NetWare server backs up only 30 Mbytes of accounting data.

"It's much faster than the Mac server," Lally said. He added that SBT printing and report generation is still too slow for the Republic, even after the switch to NetWare.

There's little chance the company will go with Intel clients exclusively in the near term, Lally said. "We've got so much tied up in this, it would be a \$50,000 decision to switch hardware and software. That's a decision we're not ready to make."

**Graphics after all these years.** Where the Mac really delivers for the Republic is in the graphics department. The company offers 26 different teas, each with unique packaging.

"The labels cost us about \$25,000 to develop vs. the \$250,000 it would have cost to do the same project at Clement Mok Design," Rosenzweig said. By doing the designs in-house "it wasn't hard to justify the cost of a color scanner or a 24-bit-color accelerator," he said.

The Republic shares after-hours time on a local color pre-press system to save money on trade-show booth and marketing materials and new product packaging.

"We're creating a movement, not just selling tea," said Gina Amador, minister of design. She said the company's unusual packaging — steel canisters with colorful, recycled paper labels — are designed to convert customers to the experience of specialty tea. The packaging has a very personal appeal, the teas are given thought-provoking names (Sky Between the Branches is the name of one green tea), and collage images scanned into Adobe Photoshop provide a compelling dash of color.

The packaging did the work of

earning customer attention. Most specialty tea is shipped in bags. Full-leaf teas, such as those offered by the Republic and which are especially prized by tea drinkers, are not often packaged successfully.

"I've been carrying full-leaf estate teas for years, and these guys are doing great packaging," said Ari Weinzwieg, a partner in Zingerman's Delicatessen in Ann Arbor, Mich. "You look at the design and presentation of information about the tea; the effort that went into it is apparent."

Amador used the Mac to design and lay out a catalog of teas and accessories, which the Republic has used as a capabilities brochure with retail outlets and as a direct-sales tool sent to individual mail-order customers.

"So far, the catalog has produced a 22 percent return," Rosenzweig said.

Producing test packaging has proved to be the Mac's other forte. Amador said that for only a few hours of work, the company can try out new tea ideas, packaging design and marketing concepts. As it prepares for its eventual move into mass-market retail outlets, such as grocery stores, it is experimenting with new package designs constantly.

"When you're working in-house, no one pays for each comp, so you have to work cheap," Amador said.

## Keeping up with change.

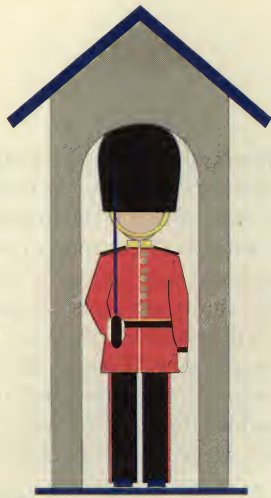
Rosenzweig said the Republic is outgrowing its computers and software, often before the company can earn a return on its current technology investments.

Some of the problems the Republic is having with technology can be attributed to its lack of computer savvy. Rosenzweig said his 15-person business cannot afford a full-time technologist to keep up to date, and he cannot deliver the guidance he once could because the tea business is going so well.

See Tea, Page 16

**Republic of Tea staffers Robert Lally, Gina Amador, Luis Ibarra and Suzy Schuman are shown above with their colorful Mac-designed packages of tea.**





# Server Sentry

## AppleShare 3.0

### Remote Management.

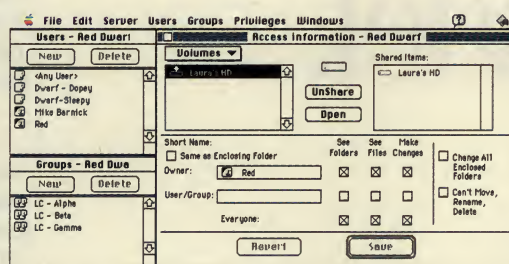
Server Sentry is the first and only Apple Events interface package to allow complete server management. Server Sentry can be used to remotely: control access to the server, get server log/statistics, provide alarms if problems occur, copy/manage users & groups between multiple servers, remotely launch/quit applications, remotely shutdown the server, and much more. All of these tasks are done from an interface which is identical to the familiar AppleShare 3.0 Admin. interface.

Use all AppleShare 3.0 Admin. features remotely.

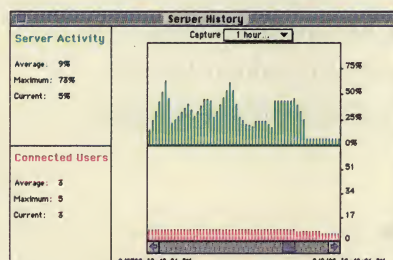
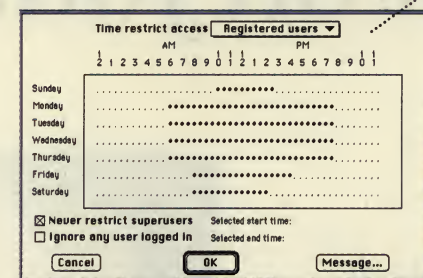
Auto Disconnect Users.

Guest to Macintosh Name Mapping.

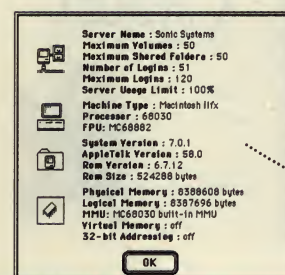
Time/User based Access Restriction to Server.



InterServer Management allows Users and Groups to be copied across multiple servers.



Server Usage Graph & Server Statistics Log (to determine who logged in/out and when).



Server Alarms can be sent to Pager, Screen & Log.

Server Profile provides the hardware and software configuration of the server(s).

Smart Copy allows folders to be copied across servers while maintaining ownership and access privileges.

	Server Sentry	AppleShare Admin
Remotely Manage Server(s)	✓	
Guest to name Mapping	✓	
Time/User based Access Restriction to Server	✓	
Server Alarms	✓	
InterServer Management	✓	
Smart Copy	✓	
Auto Disconnect Users	✓	

To order, or for more information, call:  
**1-800-535-0725**

*Sonic Systems, Inc.*





## Tea

From Page 14

He travels at least a week a month, and on the afternoon that MacWEEK visited the company, he had four meetings. So, the Republic operates without the benefit of its chief technologist.

Despite his early commitment to using technology to leverage the skills of his employees, Rosenzweig said he cannot keep up with the changing computing market.

For example, the company ordered its NetWare server before it was aware that Apple would soon ship its new Apple Workgroup Servers.

"A company our size has to rely on consultants for advice," Lally said. "Bill just doesn't have time to deal with all this stuff; it really doesn't make sense that our CEO is also our QuickMail administrator, either."

Rosenzweig agreed. "I used to have a more in-depth comfort level with technology. I'm

so busy that we have to rely on outside consultants, and that's frustrating. We had a power outage the other day that crashed the NetWare server, and no one knew how to reboot it after the power came back on, including me."

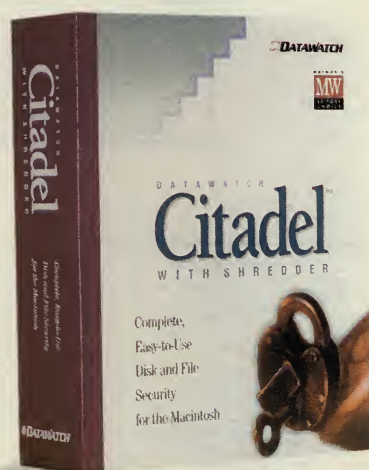
Identifying the best consultant has been a key to the Republic's computing progress. Rosenzweig said the trait he looks for in consultants is personal involvement with the Republic's mission. "The safe ground is to

find a consultant who you can trust, which means they take an interest in the success of your business beyond billing you by the hour.

"I wanted the technology to be invisible. But it hasn't been because of the order-entry and inventory problems," Rosenzweig said late in the afternoon over a cup of Pi Lo Chun green tea. "Every small business needs to budget for consulting, but you also need something that can grow with your business. That's where the Mac has fallen down." □

# Security software that's tough on intruders. Not on you! Citadel.

*Datawatch Citadel with Shredder™ is a Macworld Magazine Editors' Choice among security products because it's a complete, easy-to-use disk and file security solution.*



## Air-tight Disk and File Security



Citadel offers a full array of security features that let you protect your Mac and its data from unauthorized access. Citadel lets you lock hard drives, and lets you lock or completely disable floppy drives.

Citadel lets you encrypt individual files and folders, and its Shredder feature turns the Macintosh trash can into

a secure document shredder. Citadel also lets you lock the Mac screen after a pre-selected period of time to guard your system from browsers and tamperers.

## Easy-to-Use

Though Citadel has all the security features you need, you

won't find it hard to set up or use. In fact, Macworld magazine called it "Feature packed; easy to use" (*Macworld*, 6/92), and chose it as its Editors' Choice among security products (*Macworld*, 2/93).

So to protect your precious data without a lot of hassle, see your favorite retailer for Citadel today. Or call us for your free *Citadel Overview* at (919)490-1277, ext 327.

**DATAWATCH®**

Datawatch Corporation  
Triangle Software Division  
PO Box 51489  
Durham, NC 27717  
(919) 490-1277 ext. 327  
FAX: 490-6672  
BBS: 419-1602 (8,1,N)

© 1993 Datawatch Corporation. Datawatch is a registered trademark and Datawatch Citadel with Shredder is a trademark of Datawatch Corporation. Other product names are trademarks of their respective holders.

## Calendar of Events

### APRIL

**29-May 2:** MCN International Consultants Conference, Peachtree City, Ga. Includes product reviews, presentations and interaction with developers. Contact the Macintosh Consultants Network at (209) 545-0569 or (800) 729-4626; fax (209) 545-0279.

### MAY

**3-5:** Managing Apple Computers in Information Systems, San Antonio. Biannual conference of Mac managers' organization. Contact MacIS at (513) 398-7500; fax (513) 398-7503.

**3-7:** DB/Expo '93, San Francisco. Client-server and information technology solutions trade show and conference. Contact NDN Enterprises at (415) 966-8440 or (800) 232-3976; fax (415) 966-8934.

**3-6:** Interactive '93, Anaheim, Calif. Multimedia and computer-based training developers expo, as well as many discussion sessions. Contact Ziff Institute at (617) 252-5119; fax (617) 252-5222.

**4-5:** MacNorthwest '93, Portland, Ore. Regional Mac trade show plus conference on emerging technologies. Contact Chemeketa Community College Information Technology Group at (503) 399-6064; fax (503) 399-4898.

**9-12:** SUGI 18 Conference, New York. Statistical-analysis conference with special problem-solving booths to cover specific software snags. Contact SAS Institute Inc. at (919) 677-8000; fax (919) 677-8166.

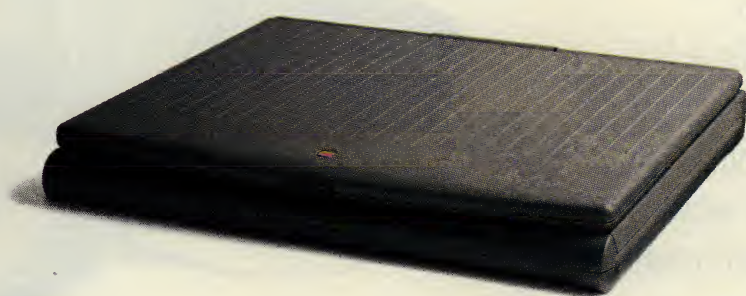
**9-13:** Apple Worldwide Developers Conference, San Jose, Calif. Presentations on Mac and other Apple technologies and marketing techniques. Contact CMI at (415) 705-8050; fax (415) 291-0126.

**11-13:** Computer Storage Exposition and Conference, Anaheim, Calif. Storage security and PCMCIA will be discussed, and new technologies will be displayed. Contact Eberhard & Co. at (212) 486-6186; fax (212) 486-6481.

*Please submit notices of conferences, trade shows and other Mac-related events to Calendar, MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105, or fax to (415) 243-3650. No training or educational seminars please.*

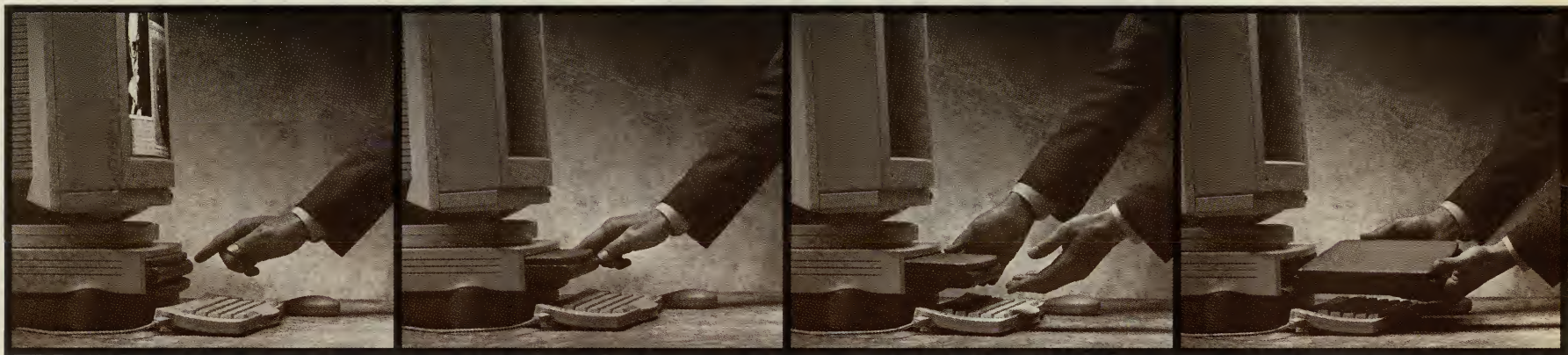


After all the  
thinking we put  
into it, we still  
can't say whether  
it's a notebook  
computer or a  
desktop computer.





# Actually, it's the be And the easiest way to g



These days, most people think you need one computer that fits your desktop and another that fits your briefcase.

Maybe what you really need is one computer that fits your life:

The Apple® PowerBook Duo™ System.

It's a stunningly practical idea — a single computer that gives you the best of both worlds.

The PowerBook Duo System has two parts: The sleek 4.2-pound PowerBook Duo, with all the features that have made PowerBook™ the country's best-selling notebook computer. And, for your desktop, a Duo Dock, which instantly turns your notebook into a powerful and fully expandable office computer.

But unlike any computer “docking station” you’ve ever seen, the Duo Dock is more than a mere mechanical device. Thanks to Apple PowerLatch™ technology, it has an intelligence all its own.

When you insert the PowerBook Duo, the Duo Dock gently pulls it in, making a perfect connection. Then it automatically sets up your printer, server and network connections and configures itself for your

**Configures itself.** All you have to do is insert the PowerBook Duo — the Duo Dock makes the connection and sets itself up for your office resources.

**No compromises.** In the office, your sleek notebook turns into a complete desktop setup with a full-size keyboard and up to a 16-inch color display.

**Thousands of programs.** You can run over 5,000 Macintosh® applications. With the right software, you can even run MS-DOS and Windows programs.





# Best of both worlds. Get from one to the other.



**No risk.** If you try to eject the PowerBook Duo while you have unsaved files on-screen, you'll be reminded to save them first.

**Easy connections.** The office is always near. All you need is AppleTalk® Remote Access software and the optional high-speed data/fax Apple PowerBook Express Modem.

**Two models.** The PowerBook Duo 210 and 230 both feature the Motorola 68030 processor, running at 25 MHz and 33 MHz, respectively.

**Multimedia power.** Apple QuickTime™ software (included) lets you make on-the-spot presentations with video, sound and animation.

**Expandable.** The Duo Dock has two NuBus® expansion slots (for such additions as 24-bit graphics and Ethernet) and ports for up to six peripherals.

**Plenty of storage.** You have one set of files, wherever you go. PowerBook Duo stores up to 80MB (with the option of 120MB in the PowerBook Duo 230).

**Flexible.** Use the Duo Dock as a single shared setup for the entire sales force, a home office or a way to expand in the future. It fits almost any plan.

**Award-winning design.** The built-in palm rest and centered trackball make working outside of the office noticeably more comfortable.

**Portable power.** The PowerBook Duo is a full-featured computer with a gray-scale supertwist display. It works up to 4.5 hours on a single battery charge.

color display and any peripheral devices that may be attached.

In fact, you can use your PowerBook Duo with different Duo Docks in different offices, and no matter where you decide to work, the system will automatically set itself up for your connected resources.

When you're ready to leave, you just press the eject button, and the Duo Dock releases the notebook, much like a VCR ejects a videocassette. (Unless you have unsaved files on the screen — in which case it has the good sense to point that out before you disconnect.)

To witness a truly intelligent display of technology, see the PowerBook Duo System at an authorized Apple reseller today. Call 800-732-3131, ext. 100, for the name of one near you. (In Canada, call 800-665-2775, ext. 910.)

You'll find that when you have the best of both worlds, all in one computer, you can enjoy the most satisfying kind of power. The power to be your best.®

The PowerBook Duo System from Apple 



# Gateways

► Networking  
► Communications



## Farallon turns up heat in Ethernet competition

By April Streeter

Alameda, Calif. — In a quest to regain a pre-eminent role in Macintosh networking, Farallon Computing Inc. last week filled in what it termed "the outstanding gaps" in its Ethernet product line.

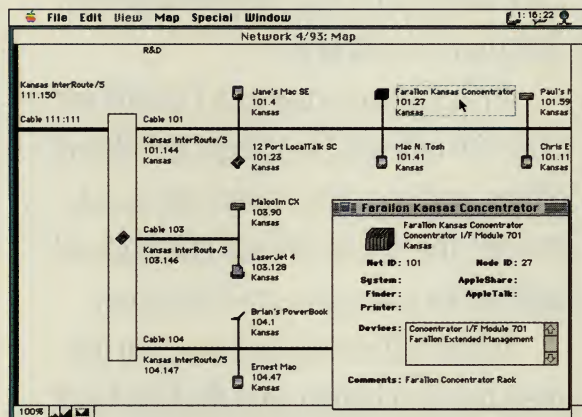
Farallon introduced an upgrade for its 10BASE T hub that provides in-band SNMP (Simple Network Management Protocol) data; a new version of its NetAtlas network-mapping

software; Ethernet transceivers; and a variety of Ethernet adapters, including external SCSI devices and cards for the latest Mac CPUs.

Farallon said this latest wave of Ethernet product introductions is part of the company's quest to retake ground lost to Asanté Technologies Inc. and other vendors during Farallon's foray into non-networking areas such as multimedia.

See Farallon, Page 22

Version 2.0 of NetAtlas from Farallon allows users to choose to map a selected zone instead of a company's entire network.



## Dayna rolls out 24-port Ethernet hub

EtherPrint also gets 2nd LocalTalk port

By Ian G. Jacobs and April Streeter

Salt Lake City — Dayna Communications Inc. this month shipped a 24-port Ethernet hub that gives small workgroups room to expand their networks.

The rack-mountable \$1,399 DaynaSTAR Hub-24 is bundled with Network Vital Signs, the company's \$449 network-management software. Dayna's \$995 12-port DaynaSTAR Hub-12 will no longer be sold.

The Hub-24 has 24 10BASE T ports and two other 10BASE T outlets for cascading additional hubs. Single BNC and AUI (attachment unit interface) connectors also let managers link the device to a thin- or thick-net backbone.

Each 10BASE T port has three LEDs that show network activity, link status and when hyperactive nodes have been shut down, or partitioned, from the rest of the network because

of excessive network traffic errors.

Marvin Price, systems manager at Motown Records in Hollywood, Calif., said the hub's automatic partitioning capability helped him hunt down a nagging problem.

"We have Macs doing sound editing, and our graphics department is using Quadras," he said. "But the LEDs helped me find out the problem [was] in a Duo Dock that was babbling to the network."

In other news, Dayna added a second LocalTalk port to its \$499 EtherPrint print server and cut the price of the four-port EtherPrint Plus and EtherPrint-T Plus to \$599, down from \$649. New software for both print servers, Version 2.0, includes a utility that lets managers name devices attached to the servers, place them in specific AppleTalk zones and apply password protection.

The software upgrade is \$99.

Dayna Communications Inc. is at Sorenson Research Park, 849 Levoy Drive, Salt Lake City, Utah 84123. Phone (801) 269-7394; fax (801) 269-7363. □

## DCA to support products acquired in Avatar buyout

By Nathalie Welch

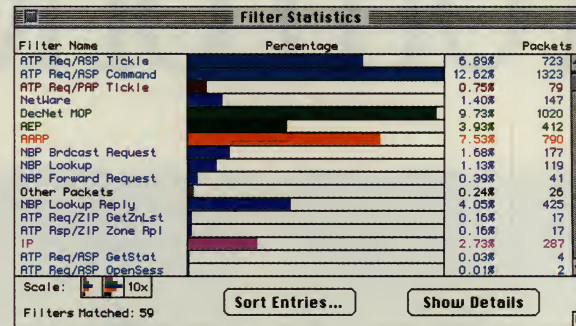
Alpharetta, Ga. — Users sometimes lose out when two similar companies join forces. But Digital Communications Associates Inc. last week announced an unusual effort to continue support for the Mac-to-IBM connectivity products it acquired through its buyout of rival Avatar Technologies Corp.

DCA last December gained ownership of Avatar's MacMainFrame Workstation, MainPrint print emulation product and Netway gateways/routers. The deal left some customers concerned about the future of these products.

► **Workstation.** DCA last week said that come fall it plans to release an aggregate product, combining features of Avatar's MacMainFrame Workstation and DCA's Irma-Workstation for Mac, that will include support for all existing MacMainFrame interfaces and third-party applications. The product is expected to be called Irma-Workstation for Macintosh 4.0.

Before the combined product is released, users can expect a couple

See DCA, Page 22



EtherPeek 2.0, shown here, and LocalPeek 2.0 both include windows that graph the percentage of network traffic being captured in user-specified protocols.

## EtherPeek, LocalPeek revisions offer more packet-sleuthing tools

By Leonard Heymann

Walnut Creek, Calif. — The AG Group Inc. last week shipped new versions of its EtherPeek and LocalPeek network-analysis tools that make it easier for users to detect and dissect wayward network packets.

Version 2.0 of both products adds new filtering mechanisms to isolate protocols during and after packet capture. The upgrades also offer a feature called "thread intelligence" that lets users zero in on specific network conversations.

► **Filters and triggers.** LocalPeek includes 250 prefabricated filters for AppleTalk and MacTCP. EtherPeek ships 350 filters, adding decoders for Internet Protocol, Vines IP, DECnet and NetWare's IPX (Internetwork Packet Exchange), among others. Fil-

ters and triggers are stored outside the application so they do not use memory when not in use.

An unlimited number of filters and triggers can be set up for both products. The filters can be set to capture packets based on source and destination, protocol, offset, and error specifications. Filters can be created based on a particular type of packet and can be color-coded to help users identify packets that meet their criteria.

After capture, users can apply various combinations of filters successively — without reloading the buffer for each pass — using hide and unhide commands. Statistics can be updated after each operation. A Filter Statistics window displays the packets passing the filters as a percentage of overall traffic.

"The filtering architecture is much more coherent," said Dr. Steven Erde, director of academic computing at Cornell University Medical College in New York, where he beta tested EtherPeek 2.0. "EtherPeek is an order of magnitude better than Network General [Corp.'s] Sniffer," he said. The leading PC-based analyzer, the Sniffer is priced starting at \$15,500.

► **SmartDecoders.** The analyzers can identify node-to-node sessions that are part of the overall stream of traffic by tracking requests and corresponding response packets. The program can also decode the session packets to the upper layers automatically.

Alerts from the analyzers can now be received via PagerPro from Caravelle Networks Corp., in addition to Notify! from Ex Machina Inc.

EtherPeek is \$795, while upgrades are \$120. LocalPeek is \$495; upgrades are \$75. Upgrades are free to users under warranty or service contracts.

The AG Group Inc. is at 254 Camino Diablo, Suite 202, Walnut Creek, Calif. 94596. Phone (510) 937-7900; fax (510) 937-2479. □

## Apple stacks up MacTCP update

By April Streeter

Cupertino, Calif. — Apple this week is expected to ship a long-awaited upgrade to MacTCP, but users who aren't in the know won't be able to find it on the company's price lists.

MacTCP 2.0 is part of Apple's forthcoming TCP/IP Connection for Macintosh, which also includes an SNMP (Simple Network Management Protocol) client.

The upgraded MacTCP includes a control panel that can find and display lists of more than 400 zones without the slowdown of previous versions, a ping application that notifies administrators when a port cannot be contacted, and a feature that notifies users of Internet Protocol address conflicts.

TCP/IP Connection for Macintosh will be \$59 for a single-user version and \$499 for a 20-user pack. TCP/IP Administration for Macin-

tosh, a network manager version with additional configuration software and manuals, will be priced at \$499.

When Apple first announced TCP/IP Connection last October, it sent developers a contract addendum reserving the right to stop them from bundling MacTCP with their products starting six months after the general commercial availability of the stack. But Apple Product Manager Alistair Woodman last week said the company has no current plans to invoke the contract clause.

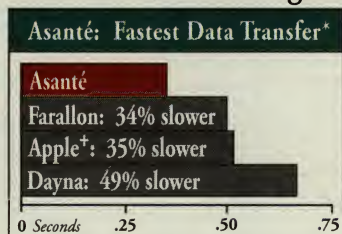
While that puts one controversy to rest for the moment, Apple has yet to resolve a dispute with InterCon Systems Corp. of Herndon, Va., over the product's name. InterCon sells TCP/Connect II, an application that offers a TCP/IP terminal, network news and electronic-mail services, and has threatened to sue Apple to prevent it from using the name TCP/IP Connection for Macintosh. □





# Now that you have the new Apples, call the only company that can network the entire orchard.

**Introducing new Ethernet solutions from the only complete Macintosh networking family.** As Apple Computer releases



\*32K file transfer between a Quadra 950 and Quadra 700. Source: Recommended Test Labs, Inc. 1993. Call Asanté for complete report.

more and more Macs®, only Asanté™ is keeping pace with Ethernet® solutions for all of them.

**Introducing the MacCon+™ LC III**

Ethernet adapter for the brand new Macintosh® LC III and Color Classic. It's a high-performance card that plugs into the LC III's 32-bit expansion slot for simple Thin and 10BaseT Ethernet connectivity. This adapter is also backward compatible with earlier models in the LC family, and the Performa 400.

**Only Asanté has an Ethernet adapter for every Apple.**

The MacCon+ LC III is just the latest innovation from the only networking company with an Ethernet solution for every Apple CPU. Asanté's family tree includes the FriendlyNet™ line of exter-

nal adapters that connect Macs with built-in Ethernet, such as the Centris 610, 650, and the Quadra 800, to Thick, Thin and 10BaseT networks. We also offer the new Mini EN/SC, the smallest and lightest SCSI-to-Ethernet adapter in the world. It's the perfect space-saving networking solution for any Macintosh without available expansion slots, and was specifically designed for portable use with the PowerBook line.

Apple CPU	Asanté Solution
PowerBook 165c	Mini EN/SC
Mac LC III	MacCon+ LC III
Centris 610 & 650 Quadra 800	FriendlyNet Media Adapters

So if you have Apples that are ripe for high-speed networking, and you want to get all your Ethernet solutions from a single source, **call Asanté, the only company capable of networking the entire orchard,**  
**at 800.662.9686,**  
**extension 201.**

**ASANTÉ™**  
ALL THE RIGHT CONNECTIONS™



# Concorde Express makes WAN transfers fly

By April Streeter

Aptos, Calif. — Engage Communication Inc. last week shipped software that speeds up file transfers over wide-area connections or in Ethernet LANs.

Concorde Express, available for \$499, works with local- or wide-area Engage routers or in tandem with other connection software to

speed up file transfers between Ethernet Macs, Macs connected via leased lines or over satellite links.

The software dials through an Engage router to a receiving Mac and commandeers space on the hard drive for direct data transfer to a designated folder. It uses a streamlined error-correction protocol to bypass the Finder's typical

acknowledgment delays during file transfers.

Engage said receiving Macs don't need to be dedicated, but a user could experience slowdowns during a transfer.

In company benchmarks, Concorde Express boosted file transfer speeds over satellite links by about 100 times, since satellite relay delays are reduced significantly.

Transfers over leased lines, such as T1, achieved throughput of 1 Mbps, four to six times faster than standard file transfer rates.

Mac-to-Mac transfers in local Ethernets were also improved, according to Engage: Two Quadra 950s on Ethernet transferred a 1-Mbyte file at about 586 Kbps. When using Concorde Express, the transfer rate increased to 2.9 Mbps.

The company said it is working on a version of Concorde Express to work over modems and AppleTalk Remote Access connections.

Engage Communication Inc. is at 9053 Soquel Drive, Aptos, Calif. 95003. Phone (408) 688-1021; fax (408) 688-1421. □

# PacerForum 2.0 opens wider view of information to users, administrators

By Nathalie Welch

La Jolla, Calif. — Pacer Software Inc. this week is shipping PacerForum 2.0, an updated bulletin board system for AppleTalk LANs that lets users tailor their views of available conferences and information.

Version 2.0, available in a five-user pack for \$549 or a 25-user pack for \$1,995, provides users with a more detailed view of all forums available, including the number of topics each contains, the time and date of the last modification, and users' access rights to a specific forum.

"PacerForum is a workgroup BBS," said Andy Harris, president of Telemorphix Inc., an interactive TV production company in San Francisco. "It combines the ease of administration with an easy-to-use interface we require." Harris said PacerForum 2.0 serves his company well by communicating that the status of a project has moved to "urgent" without intervention from an administrator.

A more powerful pop-up notifier now displays a few lines of a response, and a double-click takes the user directly to the new topic or response. The new capability to post aliases will keep server disk space clear when users want to enclose references to large attachments, such as QuickTime files.

Administration improvements include a server usage log and the capability to add new users by importing a user file from another server. Administrators can now also modify user privileges in groups and create descriptive topic icons to aid users locating information on the server and organizing forums on their hard disks.

Customers who purchased PacerForum 1.0 before Jan. 1 can get a five-pack upgrade for \$109.95 or a 25-pack upgrade for \$399.95. Upgrades are \$14.95 for those who purchased Version 1.0 after that.

Pacer Software Inc. is at 7911 Herschel Ave., Suite 402, La Jolla, Calif. 92037. Phone (619) 454-0565; fax (619) 454-6267. □

## DCA

From Page 20

of minor bug fixes and feature enhancements to both MacMain-Frame Workstation and Irma-Workstation for Mac products.

► **Gateways.** Avatar's MacMain-Frame Gateway will be maintained and enhanced in its current form with no significant changes planned, according to Scott Schroeder, DCA marketing manager for Mac products.

The Netway 2000 communications gateway and LAN router that Avatar obtained via its acquisition of Tri-Data Systems Inc. in 1992 supports AppleTalk and IPX (Inter-network Packet Exchange) for departmental-level routing. Because of the product's somewhat limited client support on the DOS and Windows side, DCA will port the

IrmaWorkstation for Windows and IrmaWorkstation for DOS packages to the Netway 2000.

► **Network interface cards.** In the short term, Avatar's network interface cards netted in the acquisition will be supported, but plans to consolidate similar cards from both companies into redesigned offerings are in the works. The release of the redesigned card, with improved performance and combined functions, is likely to coincide with the release of the aggregate client software this fall.

► **Printer products.** For now, DCA will continue to market both Avatar's MainPrint CX and DCA's own IrmaPrint2, as is.

Digital Communications Associates Inc. is at 1000 Alderman Drive, Alpharetta, Ga. 30202. Phone (404) 442-4000; fax (404) 442-4368. □

## Farallon

From Page 20

"What this introduction means for us is we're through playing catch-up," said Steve Holtzman, Farallon vice president of marketing. "It would have been easier if we had gotten into [the Ethernet market] two years earlier, but we've now filled in with all the necessary network plumbing pieces."

► **Ether10-T StarController.** Farallon has changed the name of the StarController EN to Ether10-T StarController. Ether10-T supports 12 client nodes and has an extra port for connecting to an Ethernet backbone. Starting in June, network managers can upgrade the hub for \$200 to an Ether10-T StarController/557, which adds in-band management capabilities. With the in-band feature managers can use StarCommand Version 3.2 or any SNMP console program to manage the hub.

► **NetAtlas 2.0.** Available now, Version 2.0 of the \$695 NetAtlas lets users choose to map specific zones rather than entire networks. Information about network devices, such as routers, can be viewed by double-clicking icons on the map.

► **EtherMac adapters.** Farallon has rounded out its EtherMac line with adapters for Macs released in the past year. A 7-inch NuBus card that fits the Duo Dock, Centris 610

and 650, and Performa 600 is \$189 for dual 10BASE T and thick-net media connectors or dual thick and thin connectors. A version with all three media will cost \$249.

A slightly tweaked EtherMac card for the LC III that also fits the Performa 400, 405, 430 and 450 will be \$189 for two-media versions and \$249 for a three-in-one version. With a math coprocessor, the price of the card rises to \$305 for the two-media versions and \$359 for three-in-one versions.

The cards will support Apple's implementation and are due next month, Farallon said.

The non-PowerBook SCSI adapters for either thin or 10BASE T Ethernet are \$339; versions that include the PowerBook HDI-30 SCSI cord are \$359. The SCSI adapters are available now.

► **Transceivers.** Farallon's transceivers will be available in versions to support standard Ethernet AUI (attachment unit interface) or Apple's own AUI connector. Farallon's EtherThin connects to thin-net networks and will ship in June, while Ether10-T transceivers work with 10BASE T and are available now. The transceivers cost \$85. Packages of 10 cost \$799.

Farallon Computing Inc. is at 2470 Mariner Square Loop, Alameda, Calif. 94501. Phone (510) 814-5100; fax (510) 814-5020. □

## The latest crop of fax modems

COMPANY	PRODUCT	BASE SPEEDS (BPS)	PRIMARY PROTOCOLS	BUNDLED SOFTWARE	PRICE	PHYSICAL FEATURES
BEST DATA PRODUCTS INC. 9304 Deering Ave. Chatsworth, Calif. 91311 (818) 773-9600	MacTraveler	2,400 data 9,600 send fax 4,800 receive fax	V.42bis, MNP 2-5	QuickLink II	\$199	2.75x5x1.25 inches
BOCA RESEARCH INC. 6413 Congress Ave. Boca Raton, Fla. 33487 (407) 997-6227	BocaModem	14,400 data, send-and-receive fax	V.32bis, V.17, V.42bis, MNP 5	FAXstf and QuickLink II	\$495	7.5x7.5x1.25 inches
DIGICOM SYSTEMS INC. 188 Topaz St. Milpitas, Calif. 95035 (408) 262-1277	ScoutPlus	14,400 data, send-and-receive fax	V.32bis, V.42, V.42bis, MNP 2-5, V.17	MicroPhone and FAXstf	\$389	32 ounces; 8.75x5.5x1.75 inches
	Connection 96+	14,400 data	V.32bis, V.42, MNP 2-4	Qmodem Lite	\$199	Internal
PENRIL DATACOM NETWORKS 1300 Quince Orchard Blvd. Gaithersburg, Md. 20878 (301) 921-8600	DX144	14,400 data, send-and-receive fax	V.32bis, V.17	n/a	\$595	48 ounces; 2x5.5x8.2 inches
	Alliance	19,200 data 14,400 send-and-receive fax	V.32bis, V.42, V.42bis, MNP 2-5, V.17	n/a	\$1,295	60 ounces; 2.5x9.7x10.1 inches
PRACTICAL PERIPHERALS 375 Conejo Ridge Thousand Oaks, Calif. 91361 (805) 497-4774	PM14400FXMT/Mac	14,400 data, send-and-receive fax	V.32bis, V.42, V.42bis, MNP 2-5, V.17	QuickLink II	\$299	12.6 ounces; 6.8x4.6x1.1 inches
	PM9600FXMT/Mac	9,600 data, send-and-receive fax	V.32bis, V.42, V.42bis, MNP 2-5	QuickLink II	\$269	12.6 ounces; 6.8x4.6x1.1 inches
	PM2400EFXSA/Mac	2,400 data 9,600 send-and-receive fax	V.22bis, V.42, V.42bis, MNP 2-5, 10	QuickLink II	\$189	19 ounces; 10.5x5.5x1.3 inches
	PM2400FX96SA/Mac	2,400 data 9,600 send-and-receive fax	V.22bis	QuickLink II	\$159	19 ounces; 10.5x5.5x1.3 inches
	PM2400SA/Mac	2,400 data	V.22bis	n/a	\$119	19 ounces; 10.5x5.5x1.3 inches
TWINCOM 6766-G Wrightsville Ave., Box 210 Wilmington, N.C. 28403 (919) 256-8025	MacVoyager	14,400 data 9,600 send-and-receive fax	V.32bis, V.42, V.42bis, MNP 2-5	FAXstf and QuickLink II	\$499	6 ounces; 1.2x4.5 (diameter) inches

Source: Vendors.



# The Best Way To Get To Your Printer On Ethernet Is Now Way Better.



*New version 2.0 is the best update we've ever made to our award-winning EtherPrint, the original and best way to put your LocalTalk printers on Ethernet.*

## 1. New Security Features.



For easier network management, EtherPrint can now be named and password protected. And our new SecurIt™ protection software lets you assign passwords and control access to any LocalTalk device attached to any EtherPrint in any zone.

## 2. Easier Installation.

EtherPrint has always been renowned for being remarkably easy to install and use, right out of the box. Well now we've made it even easier. You can power on EtherPrint and its LocalTalk devices in any sequence for fast, error-free start up.

## 3. Connect More Devices.

A single EtherPrint now connects two printers or other LocalTalk devices. That's double the device support for the same low retail price of \$499. EtherPrint Plus connects up to four devices for just \$599, which makes EtherPrint very well connected.

**\$499.**

## 4. More Ethernet Options.

All Ethernet cable types are supported, from thick and thin to 10BASE-T. But only EtherPrint offers the option of all three connectors on one model. And with our

auto-sensing technology, there are no switch settings to change when you switch cable types.

## 5. Way Better Support.

Like all Dayna networking products, EtherPrint comes with a life-time warranty, 24-hour turn around on repairs, and free technical support from the best trained technicians in the Macintosh networking industry.



*Dayna led the way in LocalTalk printing on Ethernet. It's only fitting that now we've made it better. Way better. Ask your reseller about EtherPrint today, or call us directly for more information.*

**EtherPrint Owners Call For Upgrades.**  
**801-269-7200**


EtherPrint is a trademark of Dayna Communications, Inc. All other product names are the trademarks of their respective holders. © 1993 Dayna Communications, Inc., Sorensen Research Park, 849 West Levey Drive, Salt Lake City, UT 84123, Phone: 801-269-7200, FAX: 801-269-5END


# Dayna

Macintosh Networking Specialists





## Colorocs back with 24-bit laser

### Tabloid printer does full-bleed CMYK

By Matthew Rothenberg

Norcross, Ga. — After two years of financial hardship, color-laser trailblazer Colorocs Corp. next month will return to action with a 24-bit PostScript-compatible output device.

The CP4007 is based on a proprietary 300-dpi engine. It prints

CMYK (cyan, magenta, yellow, black) full-bleed images measuring up to tabloid size to plain paper as well as to some types of transparency film and labels. It can output as many as 5 pages per minute in four-color mode and 40 ppm in monochrome, according to Colorocs. The device will ship with a 250-sheet paper cassette.

The printer will be available with the stand-alone Q-Script 2000 printer controller from Quintar Co. of Torrance, Calif., which comes

with the Level 1 version of Pipeline Associates Inc.'s PowerPage PostScript interpreter and 35 Type 1 fonts. The RIP (raster image processor) features a 25-MHz AMD 29050 RISC chip and 6 Mbytes of RAM, which can be upgraded to 38 Mbytes. It switches automatically among LocalTalk, Centronics parallel and RS-232C serial interfaces, and it includes a SCSI port for a hard disk. EtherTalk and TCP/IP interfaces are optional.

The CP4007 without the controller will cost \$15,100 and will require a \$395 base unit; the company said the printer will cost less than \$25,000 with the Q-Script 2000 controller.

Colorocs first announced the color laser printer in 1991, but financial problems forced the company to file for Chapter 11 bankruptcy. Its confirmation hearing is scheduled for June, Colorocs said.

QMS Inc. of Mobile, Ala., in June reportedly will announce a RISC-based Adobe PostScript Level 2 laser printer that outputs color at 2 ppm and monochrome at 8 ppm. Sources said the QMS device will probably cost about \$15,000 when it ships at year-end (see MacWEEK, April 12).

Colorocs Corp. is at 1 Meca Way, Norcross, Ga. 30093. Phone (404) 564-5520; fax (404) 564-5616 or 564-5524. □

## Paint Alchemy plug-in conjures up brush effects in Photoshop, Painter

By Carolyn Said

San Francisco — Mac artists will be able to apply a multitude of effects onto their Adobe Photoshop images with Paint Alchemy, a new Photoshop plug-in shown at this month's Seybold Seminars 93 in Boston.

Developed by Xaos Tools Inc. and scheduled to ship next month, Paint Alchemy works with Photoshop 2.0.1 or later, as well as other applications that accept plug-ins such as Fractal Design Corp.'s Painter.

Paint Alchemy offers an extensive set of tools for enhancing entire pages or selected areas with brush strokes. Users will not be able to paint over the image manually with the brushes, however.

The program will ship with 34 brush shapes that can be customized via controls for more than 30 attributes, including angle, transparency, size, color, number and style. Users will be able to link each attribute to image qualities such as hue, saturation

and brightness. For example, a user could set brush-stroke transparency to vary with the saturation of an image, stroke size to change with brightness and stroke angle to follow the hue contour.

Users will also be able to create their own brushes from any PICT file, Xaos said.

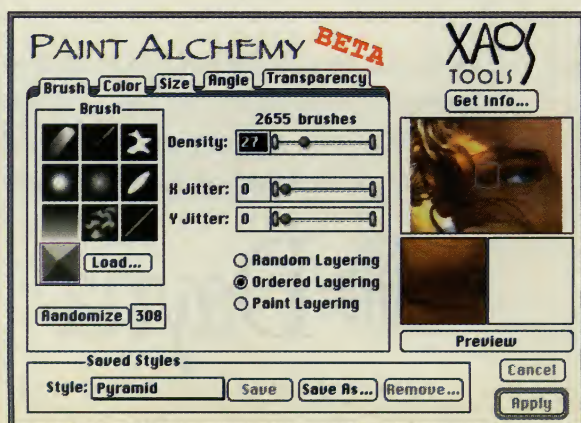
Paint Alchemy will ship with preset styles for special effects such as impressionistic brush strokes and bubbles.

Paint Alchemy will cost \$29.95 until June 30, when the price will rise to \$99. Xaos will offer 50 extra brush shapes for \$19.95. A bundle of Paint Alchemy and the additional brush shapes will be \$39.95 until June 30 and \$109 thereafter.

Xaos is best-known as a developer of high-end animation programs for Silicon Graphics workstations.

Xaos Tools Inc. is at 600 Townsend St., Suite 271E, San Francisco, Calif. 94103. Phone (415) 558-9831 or (800) 833-9267; fax (415) 558-9160. □

Paint Alchemy, a plug-in for applying brush strokes to an image, lets users control brush attributes via a series of cards. A Preview feature (right) lets users test an effect on a small area of an image quickly.



PixelCraft's Pro Imager 7650C captures images up to tabloid size in 24-bit color. It has an optical resolution of 400 by 1,200 dpi.

## PixelCraft tones up scanner for large-format color work

By Matthew Rothenberg

Oakland, Calif. — PixelCraft Inc. this month introduced a large-format 24-bit-color flatbed scanner at Seybold Seminars 93 in Boston.

The Pro Imager 7650C, scheduled to ship next month for \$11,495, captures eight bits each of RGB (red, green, blue) information per pixel in three passes and handles images measuring up to 11.7 by 17 inches. The scanner has an optical resolution of 400 by 1,200 dpi, which can be increased to 1,200 by 1,200 dpi via software interpolation. It can scan up to 2.5 inches per second, according to PixelCraft. The 7650C includes a SCSI interface and cable.

The scanner is bundled with the company's QuickScan image-acquisition software and its \$695 Color-

Access color-correction program for Adobe Photoshop files.

The company also cut the price of the Pro Imager 7650, the tabloid-size, eight-bit gray-scale version of the scanner, to \$8,495 from \$9,695 and began bundling it with QuickScan. In addition, PixelCraft cut \$3,000 off its Pro Imager 4520 RS, a slide scanner that handles transparencies ranging from 35mm to 4 by 5 inches; the device now costs \$16,995.

Last year, PixelCraft was spun off from Xerox Corp. as a high-end scanner distributor and purchased Barneyscan Corp. of Alameda, Calif. (see MacWEEK, Sept. 21, 1992).

PixelCraft Inc. is at P.O. Box 14467, Oakland, Calif. 94614-2467. Phone (510) 562-2480 or (800) 933-0330; fax (510) 562-6451. □

## Radius aims Rockets at high-end publishing

By Carolyn Said

San Jose, Calif. — Radius Inc. is packing the multiprocessing power of its Rocket 68040 accelerators into two Mac systems for high-end publishers.

At Seybold Seminars 93 this month in Boston, the company released the systems and announced that a raft of third-party products dovetail with them.

► **Radius Publishing Station**, for users who need fast image processing and rendering, is based on a Quadra 950 with up to four Radius Rocket 33 accelerators and a Radius Precision-Color 24X Interface display card.

Each Rocket can have either Radius' SCSI-2 Booster, a daughtercard that increases the speed of SCSI I/O, or DSP Booster, a daughtercard that speeds applications such as Adobe Photoshop.

Radius said a fully loaded Publishing Station has 120 mips of processing power.

► **Radius Publishing Server**, a print and image server for prepress, is also based on a Quadra 950 with Radius' color display card. It typically comes with three Rocket 33 accelerators, two equipped with SCSI-2 Boosters to improve input from scanners and output to imaging devices, and one with a DSP Booster to improve Adobe Photoshop performance.

Both systems use Radius Rocket-Share software, which lets each Rocket act as an independent processor. Pricing depends on configuration. A Publishing Station with four Rockets, three DSP Boosters and one SCSI-2 Booster costs about \$20,000.

The two systems apparently are the

precursors to SkyLab, Radius' stand-alone box that packs even more Rockets into a "media server" that runs Mac ROM code licensed from Apple (see MacWEEK, March 29). Radius officials said users should expect "a comprehensive Mac-compatible system for the publishing industry" in the next few months.

Products from 3M, Equinox Technology Inc., Hyphen Inc., Ultimate Technographics Inc., Compumation Inc. and Vartypers Inc. can benefit from the systems, Radius said.

Radius is selling the systems through a newly established network of value-added resellers and systems integrators. Information about distribution can be obtained at (800) 227-2795.

Radius Inc. is at 1710 Fortune Drive, San Jose, Calif. 95131. Phone (408) 434-1010; fax (408) 434-6437. □



# IT DOESN'T TAKE A ROCKET SCIENTIST TO FIGURE OUT WHICH 24-BIT COLOR GRAPHICS CARDS ARE THE FASTEST.

## MacWEEK

Reprinted From January 13, 1992

### BENCHMARKS

Hydra composite tests  
(Results in ticks; lower is better)

■ RasterOps 24XLi  
■ SuperMac Thunder/24

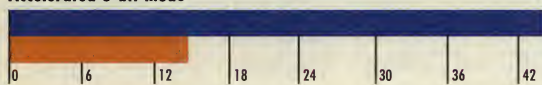
Unaccelerated 24-bit mode



Accelerated 24-bit mode



Accelerated 8-bit mode



All tests were run on a Mac IIcx under System 7.0.1 with 20 Mbytes of RAM and with 32-bit addressing on. Hydra times are in ticks (1/160th of a second).

Copyright © 1992 Ziff-Davis Publishing Co. All Rights Reserved.

Excerpted From MACWORLD  
February 1993

MW  
LAB

## Gauging Video Speed

Products are ranked in overall performance order, from fastest to slowest, within each monitor size category. The best in each category is indicated in red.

With 19-inch Monitors

SuperMac Thunder/24  
SuperMac Spectrum/24 PDQ Plus  
SuperMac Spectrum/24 Series III  
Radius PrecisionColor 24Xk  
RasterOps 24XLi  
Radius PrecisionColor 24X  
RasterOps Paintboard II

### REAL-WORLD TESTS

In our real-world tests, the size of the monitor dramatically affects performance for line scrolls: bigger monitors are slower. However, bigger monitors can have an advantage for page scrolls, where all the data on the new page is moved onto the screen in one step. Scrolls are good tests of actual performance because they are common tasks and because they cause the Mac to redraw a range of objects, from text to graphics.

Vertical Scroll  
(in seconds)

Average results for a series of up and down scrolls (one line at a time) in Excel and Word documents.

Horizontal Scroll  
(in seconds)

Average results for a series of left and right scrolls (one column at a time) in Excel documents.

Page Scroll  
(in seconds)

Average results for a series of up and down scrolls (one screen at a time) in Word documents.



Shorter bars are better.

Shorter bars are better.

Shorter bars are better.

Longer bars are better.

Longer bars are better.

Copyright © 1993 International Data Group. All Rights Reserved.

## MacUser

### Figure 1: Speed Results

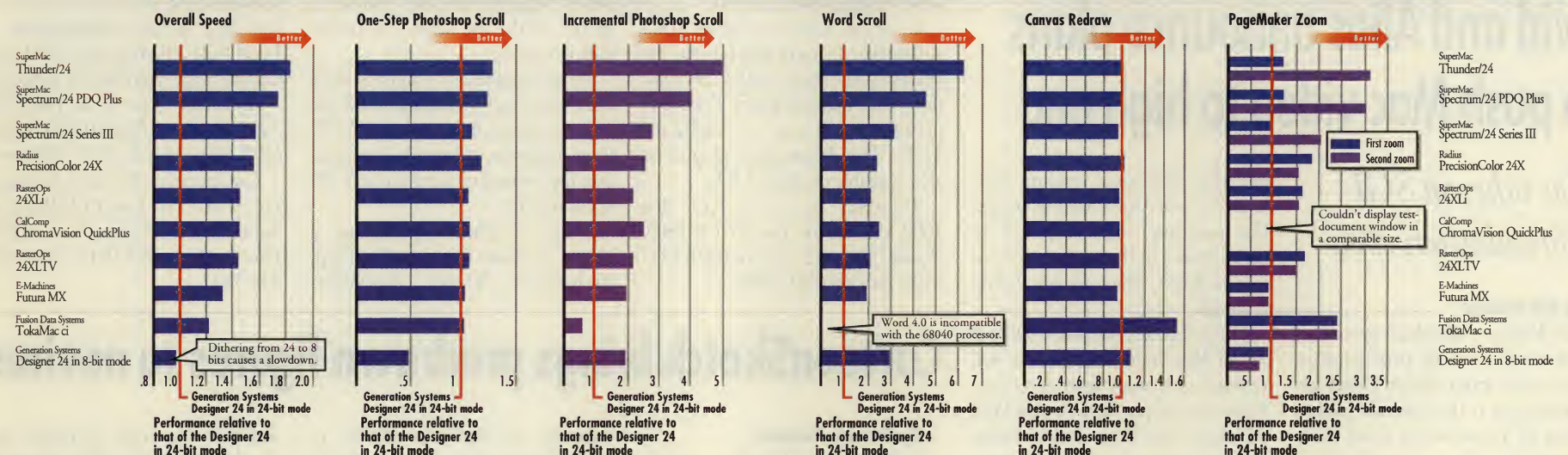


Figure 1:

To find out if on accelerated-video card can improve the performance of some popular applications, we performed a suite of real-world tests. We ran all tests on the same Mac IIcx connected to the same monitor. We compared the results with those of a Generation Systems Designer 24 unaccelerated-video card in 24-bit mode. We also subjected the Designer 24 to the same tests in 8-bit mode and repeated the tests with a Fusion Data Systems TokaMac ci to see the effect of CPU acceleration.

#### Overall Speed:

The SuperMac Thunder/24 and Spectrum/24 PDQ Plus were fastest overall, almost doubling the speed of the Designer 24 unaccelerated-video card in 24-bit mode.

#### One-Step Photoshop Scroll:

Many users of 24-bit color frequently use Photoshop, so we scrolled through same 24-bit Photoshop images to see if the accelerated-video cards could beat our control product. The Thunder/24 was 25 percent faster than the unaccelerated-video card, and the TokaMac ci CPU accelerator offered no improvement at all.

#### Incremental Photoshop Scroll:

In the incremental scroll, SuperMac's Thunder/24 was five times as fast as the unaccelerated-video card. The TokaMac ci was actually 40 percent slower.

#### Word Scroll:

To see if Word users stood to gain anything from video acceleration, we scrolled through a ten-page text document and found that the SuperMac Thunder/24 was more than six times as fast as the Designer 24. The SuperMac Spectrum/24 PDQ Plus came in a close second, and all the other cards were about twice as fast as the unaccelerated card. As 24-bit color seems a waste for Word users, we ran the same test on the Designer 24 in 8-bit mode and found that it was nearly three times as fast as in 24-bit mode, beating the majority of the accelerated-24-bit cards. We could not run the test with the TokaMac ci, because Word 4.0 is incompatible with the TokaMac ci's 68040 processor.

#### Canvas Redraw:

We were surprised to find that the accelerated-video cards did nothing to speed up a Canvas redraw. The one product that really helped in this task was the TokaMac ci, providing that this task was primarily a compute-intensive one, a task for which video accelerators are not well suited.

#### PageMaker Zoom:

Finally, we zoomed out to a 100-percent view from a 400-percent view of a PageMaker document consisting of text and a 24-bit color image. We then repeated the same test to see if the cards were caching any of the video data. All the accelerated-video cards, with the exception of the Radius PrecisionColor 24X and the two RasterOps cards, performed the second zoom much faster than they did the first. The Designer 24 card was slower in 8-bit mode than it was in 24-bit mode because the 24-bit graphic had to be dithered for the 8-bit display.

Reprinted From May 1992

Copyright © 1992 Ziff-Davis Publishing Co. All Rights Reserved.

The Hydra QuickDraw performance test has become the standard for evaluating the speed of 24-bit color graphics cards. As you can see, Thunder/24, Spectrum/24 PDQ Plus, and Spectrum/24 Series III outperform all other 24-bit color graphics cards on the market.

And at \$999 the new Spectrum/24 Series IV is hard to beat. Faster than the Series III, yet the same low price.

So, don't waste any more time or money. Take it from the experts and call for a copy of the complete test results.

And you don't have to be a rocket scientist to see just how fast SuperMac graphics cards are.

For your nearest Authorized Reseller, call **800-334-3005**. For information via fax, call SuperFacts.™ 800-541-7680.

**SUPERMAC**  
The SuperSource for Color



# Faster Phaser dye-sub device due

*Tektronix promises up to 20-fold speedup*

By Kirsten L. Parkinson

Wilsonville, Ore. — Tektronix Inc. next month will release a revised version of its Phaser IISD dye-sublimation printer that outputs bit-mapped images 10 to 20 times faster than the current model.

The Phaser IISDX will cost \$9,995, the same price as the original Phaser IISD, which it will replace. The update includes new ROM chips, drivers and an Adobe Photoshop plug-in. The company said it worked with Adobe Systems Inc. of Mountain View, Calif., to streamline the printer's PostScript Level 2 code, speeding output of scanned images dramatically. In Tektronix's tests, a 24-bit-color photograph that took about 45 minutes to process with the Phaser IISD took about three minutes with the Phaser IISDX.

The Phaser Print plug-in for Photoshop bypasses the Mac printer drivers to send the image to the printer faster. A 30-Mbyte Photoshop file can be processed over EtherTalk in about five minutes, the company said.

The Phaser IISDX also features improvements to the company's proprietary TekColor PS color-matching algorithms, increasing the printer's accuracy as a pre-press color-proofing device, according to Tektronix.

Like its predecessor, the Phaser IISDX offers 300-dpi CMYK (cyan, magenta, yellow, black) output to letter-, legal- or A4-size paper or transparencies. The printer is based



The Phaser IISDX, a Level 2 dye-sublimation printer from Tektronix, will process images 10 to 20 times faster than the company's older Phaser IISD model.

on a 24-MHz AMD 29000 RISC processor running on 16 Mbytes of RAM, which can be expanded to 64 Mbytes with special SIMMs. It offers automatic switching among LocalTalk, RS-232 serial and Centronics parallel interfaces (see MacWEEK, July 27, 1992).

Upgrades from the Phaser IISD will be free to users who bought the Phaser IISD after April 1. Installation of the upgrade kit by Tektronix personnel will cost an additional \$350. The Photoshop plug-in is also available on AppleLink.

Tektronix Inc. is at P.O. Box 1000, Wilsonville, Ore. 97070-1000. Phone (503) 682-7377 or (800) 835-6100; fax (503) 682-7450. □

# Archetype, COPS offer servers to speed pre-press, printing

By Carolyn Said

Boston — Two companies at Seybold Seminars 93 here this month showed servers designed to speed pre-press and printing tasks.

Image Engine from Archetype Inc. and PServe Advanced Document Server (ADS) from Co-Operative Printing Solutions Inc. (COPS) will let users work with low-resolution versions of an image while laying out a page and send high-resolution versions to the output device.

Image Engine, to ship in July for \$995, will run under A/UX on the new Apple Workgroup Server 95. It conforms to the Open Pre-press Interface (OPI) and Desktop Color Separation (DCS) standards for desktop production of color files.

After users put TIFF, Encapsulated PostScript or DCS files into a folder, Image Engine will create low-resolution FPO (for position only) proxies on the page. When the page is printed, the server replaces the low-resolution image with the high-resolution data on the fly.

Image Engine also simplifies DCS color proofing by merging a DCS file set's resolution-independent CMYK (cyan, magenta, yellow, black) separation files instead of using the set's 72-dpi master file.

Image Engine's features are a subset of those found in InterSep, Archetype's \$3,995 NetWare-

based image-management system for Mac and Windows clients. Archetype announced several new features for InterSep at the Seybold show: Support for Eastman Kodak Co.'s Photo CD and Scitex CT formats is available now for \$995 per format, and imagesetter-emulation software for PostScript files is due next month for \$495.

PServe ADS, scheduled to ship in June, runs under EasyServer, AFP (AppleTalk Filing Protocol)-compliant server software for COPS' 486-based computers.

Like Image Engine, PServe ADS supports OPI and DCS standards, and it also generates low-resolution files for layout and swaps them with high-resolution images at print time. PServe ADS supports spooling for up to eight devices running two input queues each, job accounting and logging, prep-file management, and error tracking, COPS said.

PServe ADS sells for \$5,495 for software only, including EasyServer. Kits that include combinations of LocalTalk, Ethernet and SCSI controllers range from \$5,795 to \$6,995.

Archetype Inc. is at 100 Fifth Ave., Waltham, Mass. 02154. Phone (617) 890-7544; fax (617) 890-3661.

Co-Operative Printing Solutions Inc. is at 5950 Live Oak Parkway, Suite 175, Norcross, Ga. 30093. Phone (404) 840-0810; fax (404) 448-7821. □

# Avid and Alias announce plans to push Mac video to high end

*Mac takes on SGI at broadcasters show*

By Erik Holsinger

Las Vegas — The Mac moved to claim a piece of the professional-video action from Silicon Graphics workstations at the National Association of Broadcasters show here last week.

Avid Technology Inc. and Alias Research Inc. both made announcements that could help incorporate the power of workstation technology into Mac production systems.

Avid and Lucasfilm Ltd. announced an alliance to produce professional tools for film and video production. Although the companies made no specific product announcements, they said the alliance will initially focus on incorporating technology from Lucasfilm's Sun-based EditDroid and SoundDroid film- and sound-editing systems into future Avid products for the Mac.

Avid distributes its sound- and video-editing software with a variety of Mac-based hardware systems.

Alias announced Open Digital Studio (ODS), software technology designed to simplify the exchange of multimedia files between the Mac

and Alias' SGI-based systems, Alias Animator and Alias PowerAnimator. The company said ODS will be implemented in the next versions of both packages, which are due to ship in the fall.

The main component of ODS will be the AliasTime utility, which will let users save animations as QuickTime files for playback on the Mac.

Despite the latest technological inroads, however, many video professionals said they still have doubts about the video-processing capabilities of current Macs. Even Apple CEO John Sculley admitted in an NAB press conference that the processing power required for serious video production won't be available on the Mac platform until the company's RISC-based PowerPC Macs ship next year.

"While Mac tools are good, the workstation technology that SGI is offering is at a better price-performance range," said Mike Backes, a Hollywood, Calif., desktop-video analyst.

Avid Technology Inc. is at 1 Metropolitan Park W., Tewksbury, Mass. 01803. Phone (508) 640-6789; fax (508) 640-1366.

Alias Research Inc. is at 110 Richmond St. E., Toronto, Ontario M5C 1P1, Canada. Phone (416) 362-9181. □

# CartoonSketch brings predrawn figures to novices

By Kirsten L. Parkinson

Seattle — Charles Schulz wannabes can get some help from a new low-cost cartoon-drawing program from Maki Software.

CartoonSketch is a HyperCard-based program that offers basic black-and-white drawing tools and a library of predrawn figures to help users create cartoon clip art and comic strips.

Features include:

**Predrawn images.** The program comes with more than 1,000 images, including human ears, eyes, heads, bodies and hair, that users can combine to create cartoon figures. Other images include animals, castle elements and quotation boxes.

**Drawing tools.** CartoonSketch incorporates HyperCard's painting tools, such as a pencil, eraser, paint bucket, spray can and controls for drawing simple shapes.

**Effects.** Additional tools let users manipulate their drawings by

rotating or skewing objects or making objects appear to be fading in or out.

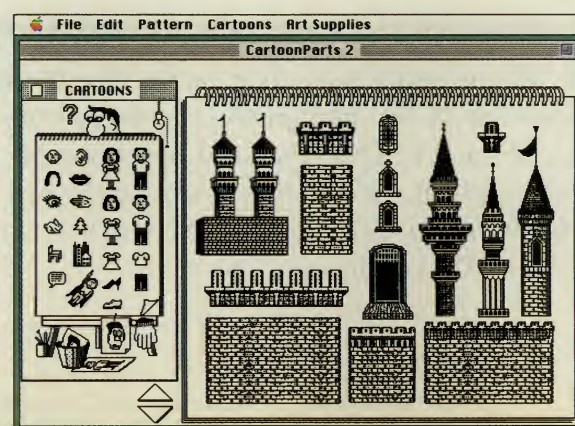
A Shadow feature automatically creates a shadow shape that corresponds to the shape of a drawn object, and an Invert button reverses the black and white areas of an image.

**Album.** The Album feature lets users create their own library of

finished drawings. Cartoons can also be exported to other programs in PICT format via the Macintosh Clipboard.

CartoonSketch lists for \$99. A special price of \$69 is available to MacWEEK subscribers, the company said.

Maki Software is at 7726 19th Ave. N.W., Seattle, Wash. 98117. Phone (206) 789-8863. □



Maki Software's CartoonSketch includes more than 1,000 predrawn images, such as these castle elements, that users can combine to create cartoons.



# Imagine the reaction to our new PostScript<sup>TM</sup> Level 2 printer.



HP LaserJet IIIIP  
\$1895



DECclaser II52  
\$1199



Apple LaserWriter NTR  
\$1695

Standard Features	DECclaser II52	HP <sup>®</sup> LaserJet <sup>®</sup> IIIIP	Apple LaserWriter <sup>®</sup> NTR	Apple LaserWriter Select 310
PostScript Level 2	<b>YES</b>	Yes	Yes	No
AppleTalk	<b>YES</b>	Yes	Yes	No
Resident PostScript Fonts	<b>17</b>	35	35	13
Simultaneously Active Ports	<b>YES</b>	No	Yes	No
List Price	<b>\$1,199</b>	\$1,895	\$1,695	\$1,079

No matter what the competition says about our DECclaser<sup>™</sup> II52, you'll swear by it. Call 1-800-DECINFO, ext. 850 to place your order or get the name of your local **digital**<sup>™</sup> distributor.



## Tech Analysis

## Getting the most from scans

Scanning  
software for  
the Mac is  
getting better  
all the time  
but still  
doesn't offer  
the quality  
found on  
high-end  
scanners.

By Bruce Fraser

Desktop scanner hardware is constantly improving, but with a few exceptions the controls offered by most desktop scanner software still lag far behind those built into high-end scanners. High-end scanners perform functions for which most desktop scanners rely on Mac software, such as sharpening and RGB-to-CMYK conversion.

High-end scanners demand much more skill from the operator: In addition to the physical skills of mounting artwork on the drum, the operator must know how to "read" an image and set the scanner controls accordingly, often without the benefit of an image preview and by using an interface comprised mainly of knobs on the front panel.

But whether you're using a high-end or desktop scanner, your aims are likely to be similar: to capture the full tonal range of the image and compress it into a range your output process can handle. You want to set the size of the scan so that it has sufficient resolution to produce good results at the size and screen frequency at which it will be printed. And you may also want to compensate for defects in the original — for example, correcting a color cast caused by using daylight film under tungsten lighting or correcting a poorly calculated exposure.

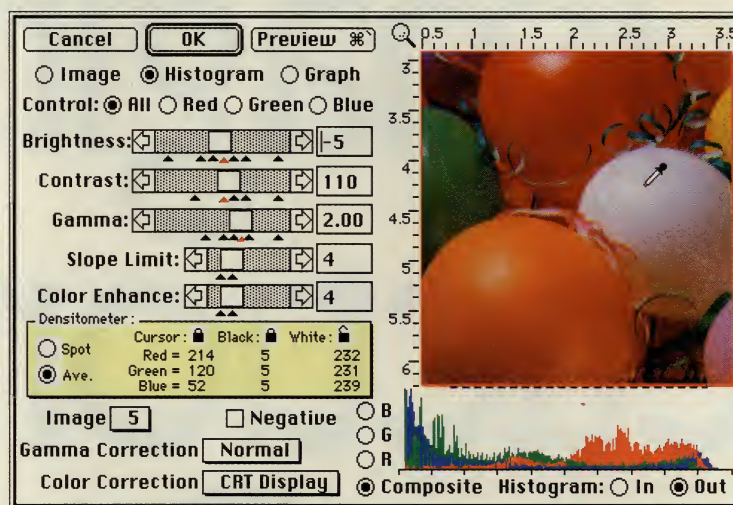
### Avoiding post-scan work.

These are all operations that should, wherever possible, be performed in the scan itself rather than as post-scan operations. Unfortunately, much of today's desktop scanning software offers very little help in getting good scans — too many vendors seem to assume that any shortcomings in the image will be fixed post-scan.

To some extent, this may be because most scanner vendors ship their software in the form of an Adobe Photoshop plug-in: Since Photoshop has copious image-processing capabilities, why include advanced controls in the plug-in?

Well, there's a good reason to do so. Photoshop lets you make huge changes to an image's brightness, contrast, tone curves and color balance, but a scanned image has only eight bits per color of RGB (red, green, blue) information (from most desktop scanners) or eight bits of CMYK (cyan, magenta, yellow, black) information if you're taking CMYK scans from a high-end scanner.

If you start making drastic changes to the tone curves or the color balance, you'll get sudden, unnatural-looking tone shifts, and you'll exaggerate any noise present in the shadow areas. For the best results, the scan should be as close as possible to the desired final result



In La Cie Silver-scan's advanced controls dialog, users can adjust gamma, brightness and color enhancement. A densitometer is available to determine color values under the cursor and to allow users to set black-and-white limits.



Light Source's Ofoto scanner software lets users calibrate a scanned image based on a profile for an eventual output device. The software also features a zoomable color preview and can automatically calculate image resolution based on final image size.

— that way, you're making the best possible use of the eight bits per channel.

If you have a scanner that captures more than eight bits per color, such as the nine-bit SilverScanner II from La Cie Ltd. of Beaverton,

Ore., or the 10-bit Arcus from Agfa (a division of Miles Inc.) of Wilmington, Mass., the advantages of correcting tone and color-balance problems in the scan itself rather than post-scan are even greater. If you wait until after the scan to fix these, you're essentially wasting the extra bits the scanner can capture.

But it's possible to get good quality even from eight-bit desktop scanners and be reasonably productive in the process if the software offers the right features.

**Preview power tools.** Virtually all desktop scanners perform a prescan, which gives a small-scale view of the image to be scanned on the monitor: Most users make decisions about the scan based on what they see in the prescan image. In an ideal world, what you see on the monitor would match your final output: Apple's ColorSync color-management architecture offers the promise that, once the various pieces are in place, it will at least be close. But for now, making judgments based on the monitor requires experience, some kind of monitor calibration, and a good idea of the differences between what you see and what you get.

But even with calibration between monitor and output, it's difficult to see, for example, a slight cyan cast in highlights or a blue cast

See Scanning software, Page 30

## SCREEN TEST

## Multimedia producer steals limelight at Grammy party

San Francisco — Brent Silveria, creative director at Passport Designs Inc. of Half Moon Bay, Calif., had not been behind the scenes since his high-school stage-crew days. However, recently he took his Mac backstage to produce and direct a multimedia presentation saluting San Francisco Bay area 1993 Grammy Award nominees.

Silveria used his company's new software, Producer, to combine and play back music, video and graphic effects into 30 segments for the recent Grammy nominees' party, here and in Los Angeles. Producer is a media-integration system, which allows users to create and integrate PICTs, slides, QuickTime movies and animation using digital, audio and MIDI (Musical Instrument Digital Interface) components.

"I tried to keep a nice variety going so it wouldn't look repetitive," Silveria said. "I tried to capture the feel of the music and



the performers in each segment."

The still shown here is from the 35-second segment of Carlos Santana's entry, "Gypsy/Grajonca," from the album "Milagro," nominated in the Best Rock Instrumental Performance category.

To produce this clip and others, Silveria worked on a Quadra 950 equipped with a

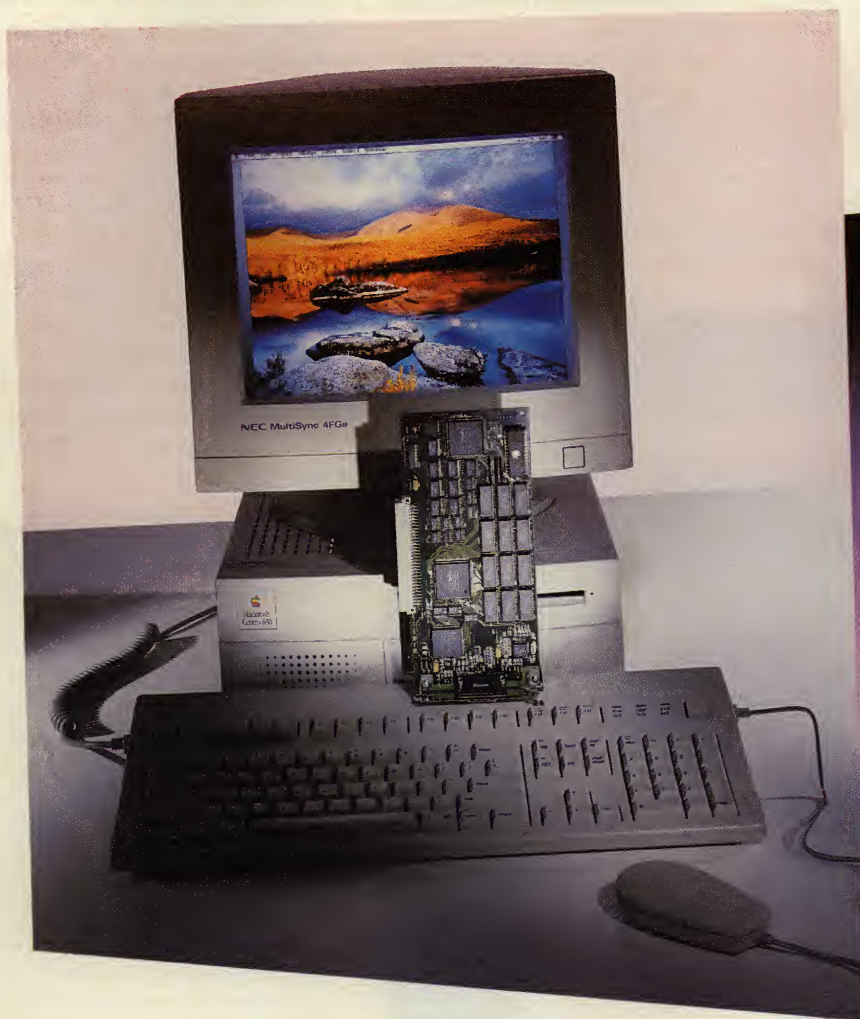
Radius Inc. VideoVision card and a MediaTime sound board from Raster-ops Corp. He scanned artwork from the "Milagro" CD package into Adobe Photoshop to manipulate it. He then transformed it into the positive image using Gryphon Software's Morph animation program. The soundtrack came from the "Milagro" CD and was digitized and synchronized with the visual input using Passport Producer.

The resulting still and moving images appeared in windows overlaid on a background created in Photoshop. Silveria played the entire piece live from his Mac directly onto a large-screen rear-projection Sony monitor.

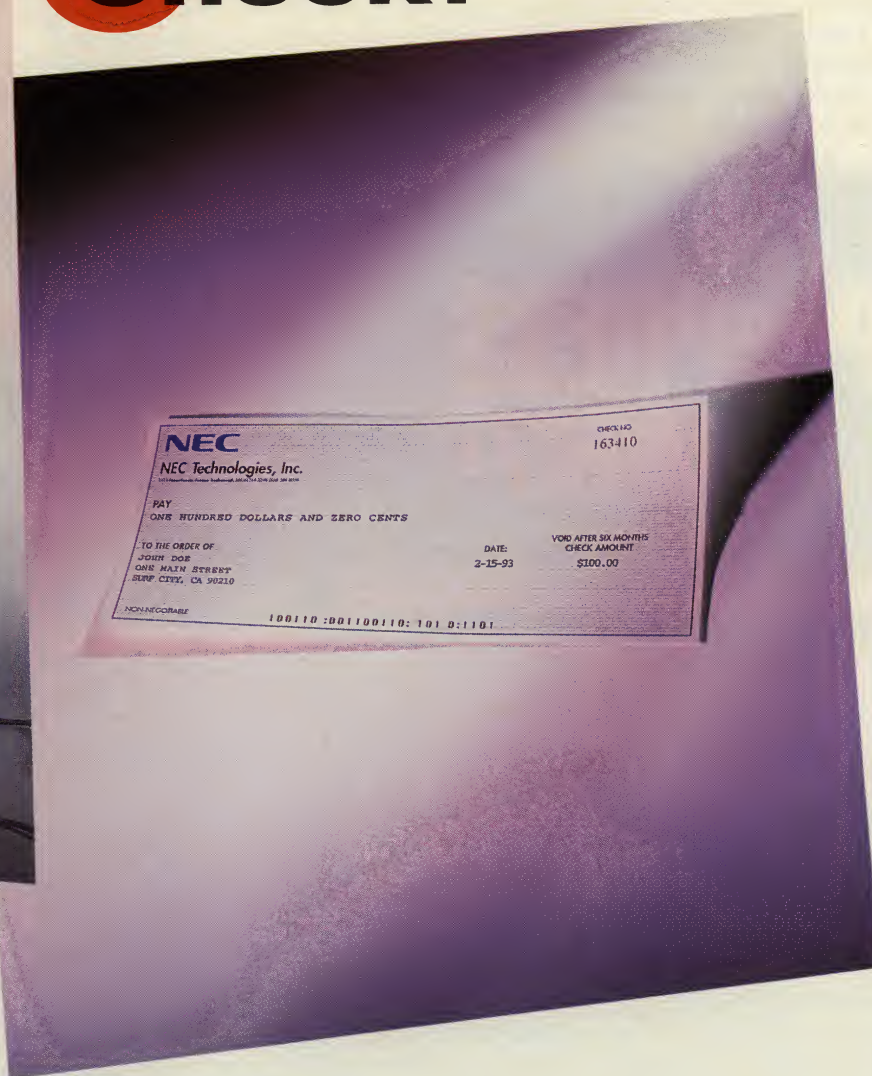
"The hardest part was coordinating the massive amount of information needed," Silveria said. "It was almost as much work as a 30-minute TV show, and only four people worked on it." — By Claudia Willen



# Reality.



# Check.



**It's real, it's a \$100 check—and it says you can afford 24-bit color.**

If you thought you couldn't afford true 24-bit color, you need a Reality Check.

**Here's how you get one.**

Just buy an NEC MacFG™ 24Xp Color Display Interface Card for your 15" or 17" MultiSync® FG™ or FGe™ color monitor before June 30, 1993\*—and we'll give you \$100.

**The MacFG 24Xp is a great deal.**

And it's even better now since it's only \$399 after the rebate.\*\*


**Multiple resolutions and more.**

The 24Xp maximizes the MultiSync monitor's performance for all your advanced graphics needs. It gives you incredible photo-realistic color, includes built-in QuickDraw™ acceleration and it is designed to maximize the FullScan™ dimensions of MultiSync monitors. Moreover, its switch-on-the-fly capability allows easy switching of display modes

without restarting your system.

**For promotion details.**

See your NEC dealer or call 1-800-NEC-INFO. For information via fax, call NEC FastFacts™ at 1-800-366-0476, request document 11 and 349701. If you're thinking of buying a 24-bit color card from someone else, you really *do* need a Reality Check!

Because  is the way you want to go.

# NEC



## Scanning software

From Page 28

in shadows. An on-screen densitometer, which provides a readout of the red, green and blue values under the cursor, is invaluable in detecting color casts in neutral areas, even when they aren't visible on the screen. This is a standard feature in image-processing applications such as Photoshop, Fractal Design Corp.'s ColorStudio and Electronics for Imaging Inc.'s Cachet, but most desktop

scanner software lacks it, with the notable exceptions of Silverscan from La Cie and QuickScan from PixelCraft Inc. of Oakland, Calif., the latter of which also offers automatic cast correction.

Of course, if the preview is gray-scale rather than color, you can't use it to make any color decisions at all. An optional gray-scale preview can be a useful productivity feature, however; it's faster than a color preview and is useful when you're working with a set of

images that have the same color problems. But when it's the only option, it doesn't make color scanning any easier.

Tone curves, on the other hand, are fairly easy to judge from a calibrated monitor. The need here is simply for better controls. Most scanner software has brightness and contrast adjustments: With skill and practice, you can use these to obtain good scans.

But a great deal of trial and error is involved. If you reduce the contrast, you usu-

ally must turn up the brightness, then increase the contrast and so on — it's like fiddling with a TV set. Much more useful are controls that allow you to set an image's white point and black point by clicking the appropriate spots in the prescan image. Controls such as these are found in scanning software from Microtek Lab Inc. of Torrance, Calif.; Hewlett-Packard Co. of Palo Alto, Calif.; La Cie; and Agfa.

But the postage-stamp-size previews offered by most scanner software make it difficult to do this with any precision. A zoomable preview makes it much easier to distinguish between a highlight where you want to preserve some texture and a specular highlight that you actually want to appear pure white.

**Curves, crops and resolution.** Once you've set the shadow and highlight points, you also need some way of manipulating the midtones. The few desktop scanners that offer such controls use a gamma control similar to either Photoshop's Levels control, where you adjust sliders to control the relationship between input density and output density, or Photoshop's Curves control, where you change the shape of a curve. La Cie and Microtek use the former approach, while Agfa offers the latter. Either technique works and provides much better results than post-scan adjustments, particularly with scanners that capture more than eight bits per color.

Even the simple process of setting a cropping area and the resolution of the scan could stand improvement in most desktop scanner software. Too many scanner drivers let you drag a selection marquee over only a postage-stamp-size preview image. It's difficult if not impossible to be accurate with such a tool. A zoomable preview can help here, but a better approach lets you enter the size and width of the cropping area numerically.

Then there's the question of setting resolution. Many users still find the equation dealing with input resolution, output resolution, screen frequency and scaling factor bewildering. The general rule of thumb is that the input resolution in dots per inch should be about twice the screen frequency of the output, multiplied by the scaling factor. Using much less than twice the line screen results in a loss of quality, while going much over twice the line screen creates an unnecessarily large file.

Instead of forcing the user to do the math, the scanner software should allow you to specify the target output device's resolution and screen frequency, tell the software what size the final image should be, and let the computer take care of the calculations involved in determining the correct scanning resolution. Software from Agfa, La Cie, PixelCraft and Light Source Inc. of Larkspur, Calif., can do these calculations for you, but most other software won't.

Scanner software is slowly improving, thanks to efforts by vendors such as La Cie, PixelCraft, Light Source and Microtek. But the features we've been discussing should be the rule rather than the exception. Operations such as sharpening and RGB-to-CMYK conversion can be done post-scan without compromising quality. The greater need in desktop scanning software is to give users the tools that will let them get the best RGB scans the hardware can provide. □

## One-Stop Shopping For Electronic Publishers!

- Mac & PC Workstations
- Color Printers
- Imagesetting Systems
- Color Proofing Systems

### Imagesetters

#### Varityper 4990A/4990S

From Macintosh to film, the 4990 is the most affordable, risk-free, commercial-quality imagesetter available. With it, you get:

- True Adobe™ PostScript™ RIP plus the best capstan film recorder on the market.
- The confidence of free installation and training by a Varityper technician.
- 30-day "No-Hassle" Warranty — If you're not satisfied with the 4990 for any reason you can return it to us — with no hassles.
- Free 1-year onsite maintenance.

4490A Imagesetter	\$22,995
4990S Imagesetter	26,995



### Processors & Pressmatch

<b>Vastek</b>	
DT-14 Processor	\$4,495
DT-22 Processor	5,895
<b>Hoechst Celanese Pressmatch</b>	
Desktop Laminator	\$1,795
Desktop Exposure Unit	3,395
Desktop Processor	7,795

### Software

Adobe Photoshop 2.5	\$549
Adobe Streamline 2.2	\$139
Aldus Fetch	219
Aldus PageMaker 5.0	599
Aldus FreeHand	399
Aldus PressWise	1,999
Altsys Fontographer 4.0	269
EFI Cachet	399
Fractal Design Painter	249
Kai's Power Tools	95
Quark XPress	599

# PrePRESS DIRECT!

a Tegra Company

### Scanners



<b>Kodak</b>		<b>PixelCraft</b>	
RFS-2035	\$6,995	7650C Pro Imager	CALL
<b>Leaf Scanners</b>		7650 Pro Imager	\$6,995
Leafscan 35	CALL	4520 Multifomat	CALL
Leafscan 45	CALL	<b>Sharp</b>	
<b>Microtek</b>		JX-610	CALL
ScanMaker II	\$ 899	<b>UMAX</b>	
ScanMaker IIxe	1,179	UC-630	\$1,179
ScanMaker 1850	1,549	UC-840	1,329
<b>Optonics</b>		UC-1200	3,295
ColorGetter II	CALL		

### Laser & Color Printers

#### Varityper VT-400

11" x 17" printer, with two input trays (one ledger-size, one letter-size standard), 400/300 dpi with Adobe PostScript Level 2, 15 pages per minute (8 ppm ledger size), 4MB of RAM (expandable to 16MB), 20,000 per month duty cycle, and 35 resident fonts (70 with font drive) **\$3,099**  
w/ 80MB font drive and 70 fonts **\$3,799**

<b>QMS</b>	
QMS-860 Printer	\$4,199
QMS-230 Printer	7,495
<b>Tektronix</b>	
Phaser IIIpxi	CALL
<b>SuperMac</b>	
Proof Positive 2-Page	\$16,895



### Workstations & Components

#### Apple

VariColor Publishing Systems — High-productivity workstations based on the Quadra 800 and Quadra 950. From color management to backgroundimage processing, these workstation are designed to meet the demanding needs of the prepress environment. Call for pricing.

#### FWB

Hammer 525MB Ext	\$1,699
Hammer 1GB	2,149
Hammer 1.4GB	2,999
Hammer 2GB	3,399
Hammer 2.8GB	6,399
JackHammer SCSI-II	799
JackHammer SCSI-II w/ purchase of Hammer Hard Drive	\$659

#### PLI

44MB SyQuest	\$ 499
88MB SyQuest	589
88/RW44 SyQuest	699
128MB Optical	1,399
650MB Optical	2,879
1GB Max Optical	3,179

#### Radius

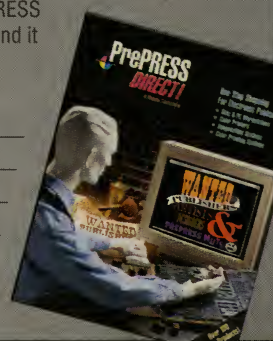
Rocket 25i	\$1,095
Rocket 33	2,279
<b>SuperMac</b>	
Spectrum/24 Series IV	\$ 829
Spectrum/24 PDQ Plus	1,545
Thunder 8	1,249
Thunder 24	2,499
ThunderStorm	899
ThunderStorm Pro	3,099
Thunder II Light	3,099
Thunder II	4,199
SuperMac 17" Display	1,149
SuperMac 20" Display	1,599
SuperMac 20T-XL	2,799
SuperMac 21" Display	2,699

## Get a FREE issue of PrePRESS DIRECT!

PrePRESS DIRECT! is the only direct-mail catalog devoted exclusively to the professional electronic prepress industry. We offer a full range of products for every step in the prepress process: from scanning, design, typography, image editing, and page makeup through output on laser printers, color printers, and imagesetters, to contract-quality color proofing. Whether your needs are in software, equipment, training, supplies, or consumables, we're the industry's one-stop shopping source. To get your FREE issue of PrePRESS DIRECT!, just fill out this coupon and send it to us, or give us a call toll-free at 1-800-443-6600.

Name: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_  
Zip: \_\_\_\_\_  
Tel: \_\_\_\_\_

MW493





# Before you buy theirs, you'd better see ours.



Hewlett Packard Scanjet IIc—133 line screen, factory default settings.



Hewlett Packard Scanjet IIc  
560 dpi

Line art enlarged  
to show detail



Silverscanner II  
1600 dpi



La Cie Silverscanner II—133 line screen, factory default settings.

## The scanner makes the image.

Silverscanner™ earned Macworld's 1992 World Class Award. Now Silverscanner II™ enhances our award-winning image—with gorgeous color, gray scale and line art right out of the box. When it comes to scanning, talk is cheap. Seeing is believing. That's why we let Silverscanner II's brilliant imagery speak for itself. You get clean, bright scans with excellent detail and tonal range in the highlight and shadow areas.

## The software make the scanner.

People on deadlines don't have time to waste. Silverscan software makes scanning as quick, painless and productive as possible. It's easy for the beginner—yet still has powerful controls for the advanced user.



Scanners from

# \$1599

ALSO SEE OUR CATALOG OF PRODUCTS IN  
THE BACK SECTION OF THIS PUBLICATION

*"La Cie's Photoshop plug-in is a delight to use." Macweek*

# 800-999-1476

International 503-520-9000 Fax 503-520-9100 6 a.m.-6 p.m. PST Mon.-Fri. VISA, MasterCard, C.O.D. and approved purchase orders accepted\*

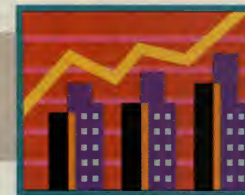


\*Call for details on terms, conditions, limited money back guarantee and free offers. System 7.0.1 software included only with certain configurations. ZFP+ Drives do not have switchable termination. Prices do not include shipping and only apply to products shipped within the continental United States. Please contact La Cie for international distribution. Add sales tax where applicable. Silverscanner, Silverscanner II, Silverscan, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. FORTUNE 500 is a registered trademark of the Time Inc. Magazine Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. Test image from Kodak Q60 Test Suite. © Copyright 1992-93 La Cie, Ltd. 8700 SW Creekside Place, Beaverton, OR 97005. Phone: (503) 520-9000, Fax: (503) 520-9100. All rights reserved. Printed in U.S.A.



# BUSINESS WATCH

► Industry news  
► Market trends



## Asanté takes early lead in Ethernet race

By April Streeter

San Jose, Calif. — If the Mac Ethernet peripherals business is a marathon with runners racing to stay in as the market expands but margins contract, Asanté Technologies Inc. is ahead by a mile now.

The five-year-old company has emerged over the past two years as the No. 1 vendor of Ethernet boards for the Mac, grabbing about 35 percent of market share, according to International Data Corp. of Framingham, Mass. Apple is next with about 24 percent, leaving Mac-

specific competitors such as Farallon Computing Inc. and Dayna Communications Inc. with just 10 percent between them (see chart).

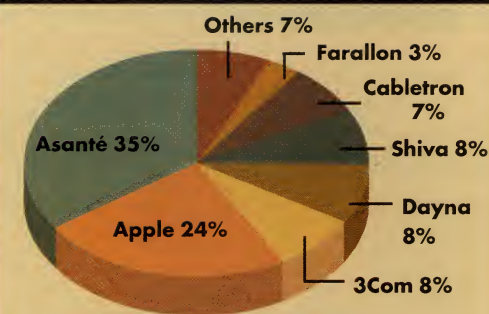
For most businesses, LocalTalk's low cost and simplicity does not compensate for its sluggishness, making the market for Ethernet peripherals — internal and SCSI adapters, transceivers, hubs, and even routers — an expanding one.

But along with opportunity loom increasing competition and commoditization. Asanté has gained and held onto its competitive advantage,

it says, with well-priced products, domestic and international distribution channels the company has coddled, and — eventually — the economies that scale-volume sales bring.

Companies that once were competitive players, such as Shiva Corp. of Burlington, Mass., have publicly stated that they are shifting their focus away

### Adapter market share



IDC's most recent figures for the Mac Ethernet adapter market are based on 1991 data. The company expects that data from 1992, to be released this summer, will be similar.

Source: International Data Corp.

## GM stalls Mac purchases in favor of buying Intel-based machines

By Jon Swartz

Detroit — General Motors Corp. has put the brakes on Mac purchases.

Citing high maintenance costs for Macs as well as a desire to standardize on Intel-based machines, the giant automaker, based here, last month issued a companywide directive prohibiting employees from purchasing Macintosh computers for use at work, according to sources. The company now has several thousand Macs.

The Consistent Office Environment task force, composed of officials of GM and its Electronic Data Systems Corp. subsidiary, made the move after several months of debate, sources said.

"There has been an anti-Mac sentiment among upper management here for years," said one frustrated GM engineer. "You had to fight tooth and nail to buy a large number of Macs."

Instead, GM plans to buy Windows NT machines. Over the next several years it will replace all of its Macs, sources said.

While GM employees said they have not seen the edict in writing, word is "rampant that it's a done deal. No more Macs," said an information systems manager at GM.

GM's decision to drop Macs marks the third such recent setback for Apple at major corporations.

Last year Boeing Co. started a five-year plan to eliminate 20,000 installed Macs, and last month Westinghouse Savannah River Co. decided to stop buying Macs (see MacWEEK, March 29).

Executives from all three companies have told employees they opted for IBM PCs and compatibles because they are cheaper to buy and support and available from more than one vendor and because IS departments wanted to focus on a single computing platform, according to sources at all three companies.

"It's disheartening but not totally surprising," said one longtime Mac proponent at GM. "It's ironic. The Mac was considered nothing more than a toy by management here until Windows came along. Now GUI is the popular buzzword here."

Apple and GM officials declined to comment. □

## Drive makers suffer through rough market

By Jon Swartz

San Francisco — An oversupply of drives with capacities of less than 120 Mbytes and a steep drop in prices battered the quarterly results of several major drive makers.

► **Conner Peripherals Inc.** lost \$22.5 million for its first quarter ended March 31. As a result, the San Jose, Calif.-based company will lay off 1,200 workers, or 10 percent of its worldwide work force, a company spokesman said. The loss is the first in Conner's seven-year history.

The company said sales increased 27 percent to \$558.3 million, compared with \$441.1 million in the same quarter a year ago. Conner reported a \$24.7 million profit in the year-ago quarter.

► **Seagate Technology Inc.** See Drives, Page 34

## Monitor makers' results vary drastically

### SuperMac scores high in sales, profits

By Jon Swartz

San Francisco — Macintosh monitor makers reported vastly different results for the recently completed quarter.

► **SuperMac Technology Inc.**, boosted by record sales of color publishing and digital video products, last week posted record sales and profits for its first fiscal quarter. Sales for the quarter ended March 31 jumped 74 percent to \$43.7 million, compared with \$25.2 million for the same period a year ago.

Meanwhile, profits for the Sunnyvale, Calif.-based peripherals maker rose 75 percent to \$2.1 mil-

lion, compared with \$1.2 million in the year-ago quarter. The company in February raised \$16.25 million in a new stock offering.

► **RasterOps Corp.** of Santa Clara, Calif., reported a 23 percent drop in sales and a \$6 million loss for its third quarter ended March 31.

The operating loss included restructuring charges of \$6.7 million. RasterOps reported a profit of \$1.8 million last year.

The company, which has now posted three straight quarters of flat sales, said sales for the third quarter dipped to \$25.1 million, compared with \$32.7 million in the same quarter last year.

In a move to get its corporate house in order, RasterOps this month appointed Paul Smith to the newly created position of president

and chief operating officer (see MacWEEK, April 19).

► **Radius Inc.** said second-quarter sales fell 28 percent and it lost \$7.9 million.

The San Jose, Calif., company, which recently named Chuck Berger as its third CEO in less than two years, said sales were \$30.9 million vs. \$42.9 million in the year-ago quarter.

In a prepared statement, Berger blamed the \$7.9 million loss on a sluggish European personal computer market and reduced demand in the U.S. market in certain segments of the Macintosh monitor market. Radius reported a \$3.6 million profit in the same quarter a year ago.

Despite the disappointing overall results, Berger said Radius noted a surge in Japanese sales and in 24-bit graphics cards. □

### Stock Watch

04.21.93 CLOSE WEEKLY % CHANGE

Apple 49.63 1.79

SOFTWARE DEVELOPERS

Adobe 46.50 3.91

Aldus 16.00 -11.11

Caere 7.50 -1.64

CE Software 3.44 -1.77

Microsoft 84.88 -4.63

Novell 32.25 -3.01

Symantec 13.00 -5.45

PERIPHERALS VENDORS

CMS 2.63 23.53

HP 74.75 0.34

Mass Micro 0.31 11.39

QMS 17.00 1.49

Radius 3.63 -1.71

RasterOps 5.38 14.65

Sigma 5.50 0.00

SuperMac 17.75 7.58

STORAGE

Conner 13.13 1.94

Maxtor 7.88 10.53

Quantum 13.13 9.38

Seagate 15.63 13.64

SyQuest 12.00 -7.69

INDUSTRY INDICATORS

DEC 44.38 6.61

IBM 49.25 0.77

Motorola 72.13 -1.20

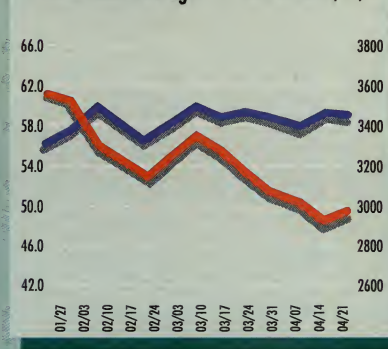
Sun 26.25 -10.64

Dow Jones 3439.44 -0.47

Compiled by Nordby International Inc.

Conner Peripherals Inc.'s stock inched up 2 percent to close at \$13.13 per share last week despite news that the disk drive maker will lay off 1,200 workers after posting the first quarterly loss in its seven-

Apple stock price ..... 49.63 on 04/21/93  
Dow Jones average ..... 3439.44 on 04/21/93



### Conner stock inches up



year history (see story, this page).

Conner's rivals didn't fare much better. Both Seagate Technology Inc. and SyQuest Technology Inc. also reported lower quarterly sales and profits.



In a new, independent lab test, the 24-bit color graphics card most people think of as fastest, wasn't.

Ingram Laboratories ran a Hydra QuickDraw™ performance test and found Radius' PrecisionColor 24X™ was 19% faster overall than the Thunder/24™.

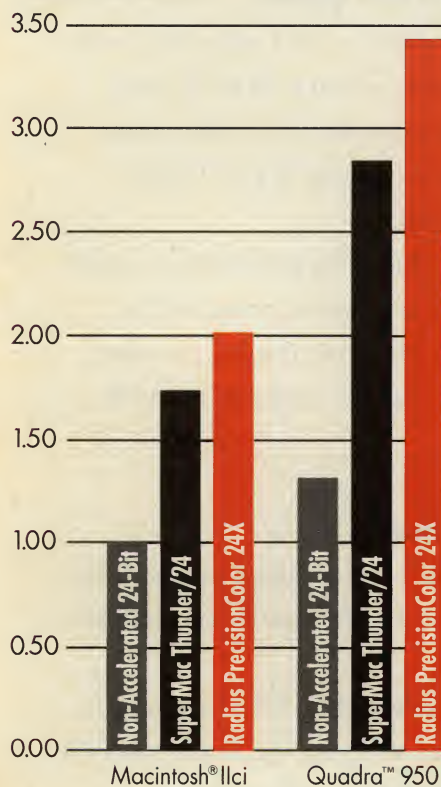
That's surprising, especially since the makers of Thunder/24 want you to pay \$1,250 more for their card.

PrecisionColor 24X isn't just faster and less expensive. It's also available in 7" and 9" versions.

So it will fit in all of Apple's newly-announced systems, as well as current models.

No wonder MacUser rated PrecisionColor 24X "Best Price/Performance." And both MacWorld and Byte named it their "Readers' Choice."

Hydra QuickDraw Performance Test  
Overall Performance



Call us at 1-800-227-2795 Ext. 2A for your \$100 rebate certificate, copies of the benchmarks and the name of your nearest Radius reseller. Or call 1-800-966-7360 to receive faxed information about our products.

Get PrecisionColor 24X. Lightning fast performance. Priced to strike you right.

# If This Independent Test Doesn't Astonish You, The Cost Difference Should Leave You Thunderstruck.

PRECISIONCOLOR 24X  
**radius**™





# Apple signs GTSI as its new federal distributor

By Lisa Picarille

Washington — A deal between Apple and Government Technology Services Inc. last week ended Falcon Microsystems Inc.'s decade-long reign as the exclusive reseller of Apple products for routine federal-government purchases.

Under terms of the deal, GTSI as well as Falcon will be authorized to sell Apple's full line of products to the General Services Administration schedule. GTSI already supplies IBM machines and Unix workstations to the government.

GTSI, based in Chantilly, Va., was the leading computer supplier to

the federal government in fiscal 1992, garnering \$152 million in sales from the GSA schedule. The GSA totaled about \$671 million in sales last year.

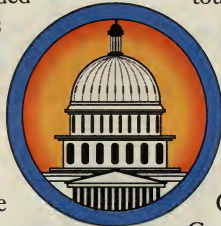
The deal with Apple culminates years of GTSI proposals to the computer maker about becoming a distributor, according to GTSI spokesman Bob Capozzi. "We have demonstrated our ability to market to the federal government and Apple knows we excel at [that]," he said.

Henry Clifton, director of the Apple Federal Systems Group, said, "Apple periodically reviews its channel strategy and looks at alternatives."

Industry observers, however, claim Falcon's tense relationship with Apple might have prompted the agreement with GTSI. The relationship was reportedly aggravated this month when Falcon announced it would also carry products from Dell Computer Corp. (see MacWEEK, April 12).

Apple denied that Falcon's deal with Dell was a factor in its decision to sign an agreement with GTSI.

"Falcon made a business decision about the kind of technology it would carry," Clifton said. "We don't consider it a negative move. In fact, it's a healthy move. And the reality is that there are federal offices that also want to purchase DOS machines." □



## Ethernet

From Page 32

from commodity areas and toward niches such as remote networking.

Others, such as Focus Enhancements Inc. of Woburn, Mass., which licenses adapters from Sonic Systems Inc. and sells them primarily through mail-order catalogs, jolted the market by introducing \$99 NuBus and Mac LC model boards this year. Competing boards cost more than \$200.

"Brand allegiance is a myth," said Craig Johnson, Asanté director of product marketing. "It may not be as much a commodity market as everyone thinks, but price is No. 1."

Murmurs that inexpensive Korean chips are appearing on various vendors' boards has also kept anxiety high. Adapter vendors said the widespread use of "clone" chips will push prices further down and cause vendors that use National Semiconductor chip sets to accept slimmer margins to stay competitive.

"There's very little margin left in

this market," said David Pascoe, Dayna director of marketing. "It's either grow or die."

Major Mac competitors such as Asanté, Dayna and Farallon, for example, have continued to keep supplying adapters to work with new Apple CPUs and offer a line of network products. At the same time, each player has had to carve out other niches.

With its success at the lower end of the market, Asanté has decided to build larger hubs and internetworking devices, in the process taking on bigger guns in the field such as Cisco Systems Inc. and SynOptics Communications Inc.

Dayna said it has a philosophy to "stay out from the inside of people's wiring closets" and instead add value through easy-to-use software such as adapter drivers that can be updated on an entire network from a single Mac.

Farallon, which entered the adapter market last year and has struggled to get a foothold, is

putting its eggs in the cross-platform software basket. It is promoting Timbuktu as a peer-to-peer solution for smaller networks while continuing to introduce the necessary Ethernet peripherals (see story, Page 20).

According to Chip Pettirossi, LAN analyst at IDC, there are still sales to be made in Ethernet peripherals although commoditization will continue at the lower end of the market. "The card market is a mature market and there are significant price pressures at the low end of [the hub] market," he said. "One trend that hasn't changed is people are migrating from LocalTalk and doing it quickly." □

## Drives

From Page 32

announced lower sales and profits for its third quarter ended April 2.

The Scotts Valley, Calif., company reported revenues of \$754.1 million, down 3 percent from \$779.9 million in the same quarter a year ago.

The company's profits, meanwhile, slipped 4 percent to \$39 million, compared with \$40.7 million last year.

► **SyQuest Technology Inc.** of Fremont, Calif., posted record sales, but escalating operating expenses took a bite out of profits.

SyQuest said revenues for its second quarter ended March 31 rose 20 percent to \$51.5 million. Profits, however, fell 2 percent to \$3.57 million because of an additional \$15 million in quarterly operating expenses.

Despite the dip in profits, SyQuest recorded its 18th consecutive profitable quarter.

Maxtor Corp. of San Jose and Quantum Corp., based in Milpitas, Calif., are expected to announce their financial results this week. □

## Business

### BRIEFS



#### All quiet on rumored RasterOps-Scitex merger front

Santa Clara, Calif. — RasterOps Corp. officials had no comment last week about a possible merger with Scitex Corp. But industry sources said the two companies have discussed pooling their resources in the competitive high-end graphics market.

RasterOps Chief Financial Officer Kent Robertson said RasterOps has had a "good, positive relationship" with Scitex for several years, but he stopped short of saying any merger agreement had been signed with the Israeli-based company. Robertson declined to say how many workers RasterOps has laid off as part of a recent reorganization, but he said the number was small. The company employs more than 350 people, including about 150 here and 100 at Truevision Inc. in Indianapolis.

#### Big Blue suffers big loss in first quarter

Armonk, N.Y. — IBM Corp. suffered a \$285 million loss for its first quarter, compared with a \$642 million profit for the same quarter last year. For the period ended March 31, the computer giant reported a 7 percent drop in revenues, to \$13.1 billion, compared with \$14 billion last year.

IBM Chairman Louis Gerstner blamed the poor results on weak demand and continued competitive pressures, particularly for mainframe computers and large disk drives. Gerstner, however, said demand for IBM personal computers, workstations and PC services remained strong.

#### Compaq's sales, profits double

Houston — Defying a fierce personal computer price war, Compaq Computer Corp. said sales and profits more than doubled for its first quarter ended March 31.

The computer maker reported sales of \$1.6 billion, compared with \$783 million in the same quarter a year ago. Profits increased to \$102.4 million, compared with \$45.3 million last year.

According to analysts, Compaq is selling PCs at five to seven times the industry's estimated growth rate, a level attained only by Dell Computer Corp. of Austin, Texas.

#### Apple expands in fast-growing Mexican market

Mexico City — Apple is increasing its push in one of the world's fastest-growing personal computer markets.

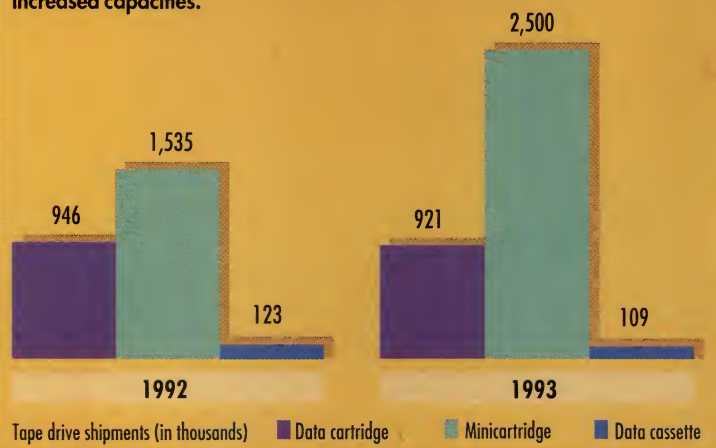
The company last week opened the doors to Apple Computer Mexico, a marketing and channel-development office that will also provide service and support to resellers, software developers and technology partners. Apple has four distributors in Mexico.

International Data Corp. of Framingham, Mass., estimates the PC market in Mexico will swell 29 percent to \$1 billion this year.

## MacWEEK index

### MINICARTRIDGE SHIPMENTS SOAR

Minicartridge tape drive shipments are expected to grow 60 percent to 2.5 million units worldwide this year because of declining prices and demand for increased capacities.



Source: Peripheral Strategies Inc.



#### STORAGE

Our high performance, high capacity drive is a must for graphics professionals. At 5400 RPM and 11ms access time, your productivity will boom.

**\$2749**  
2.1 gig Fixed

#### ACCELERATION

Pump up the performance of your Mac to the level of a Quadra with a Focus Accelerator card. Outfit your NuBus Mac with a 68040 running at either 25 or 33 MHz.

**\$1499**

#### ETHERNET

When you move large color files over your network, you need the high speed of Ethernet. Focus EtherLAN cards were the first and only to break the \$100 barrier for graphics professionals who don't want to waste time or money.

**\$9999**

#### SCANNERS

Our top of the line Color Scanners at rock-bottom prices will make your color images jump off the page. 24-bit, three-pass color and 256 grayscale capability. Three models from which to choose.

**\$89999**

800dpi \$1099  
1200dpi \$1999

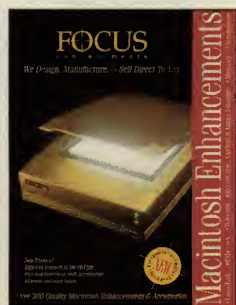
# Roses are Red. Violets are Blue...

## We design, manufacture, and sell direct to you!

Finally what the Macintosh design professional has been waiting for. Color scanners and enhancements that work together, at affordable, "direct-to-you" prices. The new FocusScan 24-bit color scanners are the heart of any new DTP system. The reliable Toshiba scanning engine will give you true-to-life scans every time, no matter which resolution you choose; 600, 800 or an amazing 1200 dpi. Focus can deliver a complete, integrated system that's guaranteed



to work together: the latest in Ethernet 32-bit technology, incredibly fast large capacity drives, accelerator cards (for LC, SE, NuBus and Classic) with additional memory slots, and a full line of memory SIMMs to handle the work the way you want to. It's not just state-of-the-art, it's a statement on how we do business every day. Check out our products, superior prices, knowledgeable service and our 30-day Love It or Return It guarantee.



## To Get Your Free Catalog Call Toll-Free 800-538-8866

# FOCUS

enhancements



How to Order: Our customer advisors will help you Monday thru Friday 7am to 8pm, Saturday and Sunday 11am to 5pm EST. We accept Visa, Master Card, American Express, Discover, Cashiers Checks, and Money Orders. Focus Enhancements, Inc. 800 West Cummings Park, Woburn, MA. 01801 (617) 938-8088 fax 938-7741  
©1993 Focus Enhancements, Inc. All rights reserved. EtherLAN LC, Focus XXL Drives, TurboNet, FocusScan are registered trademarks of Focus Enhancements, Inc. All prices and items are subject to change and availability. All product names are trademarks of their respective holders.



## MacWEEK

**Publisher** David J. Ezequille  
**Editor** Henry Norr

## EDITORIAL

**Executive Editor/Reviews** Rick LePage  
**Executive Editor/Features** Anita Malmig  
**Managing Editor** Brenda Benner

**Senior News Editors** Andrew Gore, Carolyn Said  
**Senior Editor** Erik Holsinger (ProductWatch)  
**Technical Editor** Stephen Howard  
**Editors at Large** Dale Coleman, Mitch Ratcliffe  
**Associate News Editors** Neil McManus (GA), Leonard Heymann (Gateways), Jon Swartz (BusinessWatch)

**Senior Writers** Lisa Picarille, Matthew Rothenberg  
**Technical Analyst** Raines Cohen

**Associate Editors** Kurt Carlson, Missy Roback (Reviews), Sean Wagstaff (Reviews)

**Staff Writers** Robert Hess, Kirsten Parkinson, April Streeter, Nathalie Welch

**Assistant Managing Editor** Anne Matera  
**Senior Copy Editor** Mariann Hansen  
**Copy Editors** Allison de Laveaga, Ken Torisky, Kathy White

**Assistant to the Editor** Pamela J. McIver  
**Editorial Assistant** Maria Sample  
**Editorial Intern** Ian G. Jacobs  
**Contributing Editors** Clay Andres, Don Crabb, Ric Ford, Bruce Fraser, Connie Guglielmo, Steve Hannaford, Steve Michel, Jonathan Oski, David Ramsey, Steve Rosenthal

## ART AND PRODUCTION

**Managing Director/Production and Technology** Barri Klingaman  
**Art Director** Eleanor Leishman  
**Assistant Art Director** Margaret Lee  
**Infographic Specialist** Nevin Berger  
**Graphic Designer** John Farnsworth II  
**Production Manager** Steve Spingola  
**Assistant Production Manager** Joy E. Krinsky  
**Pre-press Manager** Tim Manousos  
**Assistant Pre-press Manager** Tamara Gargus  
**Pre-press Technician** Dave Janusko  
**Ad Production Coordinator** Michele Kellogg

## ADMINISTRATION

**Business Manager** Rosemarie Carbone  
**Marketing Director** Vickie Welch  
**Marketing Coordinator** Christine Forney  
**Circulation Manager** Linda Emanuele  
**Sr. Circulation Coordinator** Me'Shel A. Riedel  
**Circulation Assistant** Lorraine O'Shea  
**Systems Administrator** Judy Hart  
**Research Associate** Sean Pfister  
**Assistant to Publisher** Grace Jue  
**Sales Assistant** Dario A. Lorenzana Jr.  
**Administrative Assistant** Heather Kudzia  
**Billing & Credit Coordinator** Elizabeth Hurst  
**Office Services Coordinator** Quentin Thompson

## ZIFF-DAVIS MAGAZINE NETWORK

**Group Vice President** J. Samuel Huey  
**Managing Director** Joseph Gillespie

## ZIFF-DAVIS PUBLISHING COMPANY

**Chairman and CEO** Eric Hippeau; **President** J. Scott Briggs; **President, Ziff-Davis Domestic Publications Group** Ronni Sonnenberg; **President, Ziff Desktop Information** Michael Kolowich; **Executive Vice President, Centralized Operations Group** Mike Edelhart; **Executive Vice President, International J.B. Holston III**; **Group Vice President, Controlled Circulation Publications** Claude P. Sheer; **Group Vice President, Direct Publications** Jim Stafford; **Group Vice President** J. Samuel Huey; **Senior Vice President, Marketing** Paul H. Chook; **Senior Vice President** Rachel Greenfield; **Vice President & General Manager** Louis B. Dotti Jr.; **Vice President, Operations** Baird Davis; **Vice President, Controller** Howard Skolnik; **Vice President, Creative Services** Herbert Stern; **Vice President, Research** Rolf M. Wulfsberg; **Vice President, Circulation Services** James F. Ramaley; **Vice President, Marketing Services** Ann Pollak Adelman; **Vice President, Production** Roger Herrmann; **Vice President, Europe** Frank Kelcz; **Vice President, Technology** William B. Machrone; **Vice President, Central Advertising Sales** Paul Stafford; **Vice President, ZD Magazine Networks** Marian O. White; **Vice President, Human Resources** Rayna Brown; **Vice President/Managing Director Magazine Networks** Joseph Gillespie; **Assistant to the Chairman** Tom McGrade; **Executive Director/Information Systems** Owen Weekley; **Licensing Director** Jean Lamensdorf; **Director of Planning** Gary A. Gustafson; **Production Director** Walter J. Terlecki; **Director of Sales Training** Dan Leonetti; **Director of Corporate Marketing** Susan Delman; **Editorial Director** Lewis D'Vorkin; **Co-Directors ZD Benchmark Operation** Bill Catchings and Mark L. Van Name; **Director, Direct Marketing Programs** Alicia Marie Ivans; **Director of Public Relations** Gregory M. Jarboe

## ZIFF COMMUNICATIONS COMPANY

**Chairman** William B. Ziff Jr.; **President** Philip B. Korsant; **Vice President & Special Assistant to the Chairman** Bruce Barnes; **Senior Vice President** Steven C. Feinman; **Vice President, General Counsel and Secretary** J. Malcolm Morris; **Vice President, Controller and Treasurer** Patrick J. Burke Jr.; **Vice President, Business Manager** T.L. Thompson; **Vice President, Chief Information Officer** Thor Olson

**Editorial and advertising offices:** 301 Howard St., 15th Floor, San Francisco, Calif. 94105. Phone (415) 243-3500; fax (415) 243-3651.  
**Subscriptions:** Customer Service Department, MacWEEK, c/o JCI, P.O. Box 1766, Riverton, N.J. 08077-7366. Phone (609) 461-2100.

## EDITORIAL

## Apple site licensing: A mystery story

Sometimes the way Apple conducts its business leaves even the most devoted company watchers scratching their heads. Case in point: the Apple Software Volume Licensing Program, the semisecret system-software site-licensing program disclosed in last week's MacWEEK.

Why the company is offering group licenses is no mystery: As in other industries, big customers demand volume discounts, and they don't want the overhead that purchasing hundreds or thousands of separate retail packages would entail. When it released System 7.0 in 1991, Apple offered a form of site licensing through its CD-ROM-based Group Upgrade Kit, and the case is all the more compelling now that most system software is no longer free.

What's puzzling about the Apple program is how it has been implemented:

► Why has it taken so long? Last October, Apple promised to announce multi-user pricing for System 7.1 by the end of November; more than six months later, there's still been no official announcement. In our view, the delay is

unforgivable, considering that some of the software covered by the program, such as the DAL Client and MacTCP, is mission-critical for some shops.

► Why the secrecy? The program has apparently existed, at least in part, since February, but information about it has been available only to selected sites. In the interim, other customers have been kept in the dark, and some have undoubtedly overpaid for needed software.

► Why mail order only? Why hasn't Apple also offered the program through dealers and value-added resellers, who could combine licensing with customized on-site upgrade and support programs?

► What about AppleTalk Remote Access? Ever since Apple unbundled ARA from the PowerBooks last year, demand for group licensing has been strong.

Apple should be doing everything it can to make life easier for managers committed to its technologies. Site licensing is an important step in that direction, but the company needs to stay on track and walk faster. □

## Commentary

## Let's talk about some numbers from Apple

Apple's numbers are out. Compared with the same time last year, sales are up, profits are down, and the stock barely budged. Sounds like business as usual. The market-share strategy keeps working, and margins keep declining, but they remain well above the ever-shrinking numbers typical of IBM PC clone makers.

As a result, Apple's stock seems to observe the same kind of status quo. The occasional spikes are but a testament to the everlasting need for financial markets to have something to hype, a need well fed by demos, introductions and the latest rev of the vision from Apple. But soon, the stock returns to the \$40-to-\$50 band where it has spent most of its time since the October 1987 crash.

On closer examination, however, Apple's latest results are a lot less routine than they seem. They, and comments made upon their release, raise a number of questions regarding the company's prospects.

**Increase in units.** One startling item is a 50 percent year-to-year increase in units shipped in the United States. This is a remarkable achievement. It doesn't say much about revenue, margins or even market share, considering the equally impressive growth in the PC industry last year. But it does show that, contrary to the dire predictions of loss of differentiation vs. Windows and of the resulting inexorable demise of the Macintosh, Apple products still enjoy demand in the marketplace.

A second question arising from the numbers concerns Apple's business in Europe. Sales there are stagnating and, in some areas such as France, regressing. The general business climate is worse than in the United States. But not everyone is suffering equally. Compaq Computer Corp. is having a banner year in Europe; in some areas shipment tonnage, which more or less parallels unit volume, has tripled. Apple Europe tried reorganizing itself and its distribution channel, but these moves haven't worked as well as expected and are now being re-examined.

Worldwide, Apple's margins have declined by about 10 points in the past 18 months, and there's no end in sight: Now that the courts have authorized Advanced Micro Devices Inc. to compete in the 486 arena, the PC price wars may intensify again. What this will do to Apple's margins is predictable; how well the company will be able to sustain this trend is

less so. So far, the company has managed with moderate cuts in staffing and expenses. Its ability to make more profound changes to its lifestyle could be tested in the future.



JEAN-LOUIS GASSÉE

**Restoring margins.** Could Newton and Apple's other personal digital assistants spell margin relief? Certainly not in the near term. Anything related to consumer electronics is likely to offer even lower margins than computer products. And for the time being, Apple's Personal Interactive Electronics division spends money at a typical Apple pace — fast and furious — and costs are likely to accelerate as real product introductions approach.

In the end, any real hope of margin relief is with Apple's core business. The latest Macs are convincing and could help. But the big bet is on the PowerPC. Fortunately for Apple, the hardware looks very good, even compared with the Pentium. Moving to RISC could give the company a real opportunity to increase its differentiation and translate it into higher margins. There remains only the matter of negotiating the transition to a new platform — a not so simple matter of software. □



## LETTERS



## MacWrite Pro quality control from Claris' vantage point

The letter from Dennis Geller, "MacWrite Pro scriptability raises quality-control concerns," (MacWEEK, April 12) questioning the "secretly included" support for undocumented Apple events in MacWrite Pro 1.0 deserves a response.

In addition to the minimum required Apple events supported by MacWrite Pro, the program incorporates other Apple-event technology upon which we can build in the future. Before shipping MacWrite Pro, we tested it fully. This included testing the events to ensure they would not "break" or cause problems with the currently supported functionality of the product. They are clearly high-end capabilities accessible only to the most advanced Mac user. If users of scripting tools such as UserLand Frontier 2.0 want to experiment with the additional Apple events, they can, and most will be glad they are available in MacWrite Pro today. With MacWrite Pro, Claris Corp. has delivered yet another full-featured, intuitive, quality product of which everyone is extremely proud.

Looking forward, the primary benefit of Apple events for most users will be scriptability through AppleScript. Claris plans to enhance MacWrite Pro to fully support AppleScript and enhanced Apple events in the future. The technology in MacWrite Pro of which Geller speaks serves as the basis for the evolution of the product — an investment in the future of both the product and our customers. It reflects the steadfast commitment to our users and the professionalism, quality and foresight of the development process here at Claris.

*Graham Burrows, director  
Text and graphics, product development  
Sofie Plener, MacWrite Pro product manager  
Claris Corp., Santa Clara, Calif.*

## MacWrite Pro printer bug sends user back to Word

The significance of the story "MacWrite Pro has a secret: Scriptability" (MacWEEK, March 22) was brought home to me when I received my new copy of MacWrite Pro. I liked the look and feel of the application. Everything was working great until I tried to print a document with footers and footnotes on my PLP II printer from GCC Technologies Inc. Instead of footers and footnotes, I got a blank space on my page.

After one hour of trying various options, including reading the user manual, I called Claris Corp. After waiting an interminable period (Claris needs to hire more support personnel), I spoke to a pleasant woman who said my printing problem was a known bug with QuickDraw printers. She told me that the problem would be corrected if I turned on background printing, then printed. I tried that,

but it didn't work either. In exasperation, I gave up and went back to using Microsoft Word.

Perhaps Claris' developer should have spent more time getting basic functionality into the product rather than trying to implement features that most people will never use. If this is the best Claris can do after a two-year delay, MacWrite Pro will soon join Resolve in the "too little, too late" hall of shame.

*Thomas J. Rossi, Bellevue, Wash.*

## National paper's separations on hold only for color printer

The otherwise good story "Daily newspapers and the Macintosh" (MacWEEK, April 12) was marred by two errors concerning The Washington Post National Weekly Edition.

The story stated that the Weekly "hasn't pushed the project to full pagination (art is still sent through separately and stripped in in the engraving department)." In fact, almost all black-and-white art is scanned in and output on the page. Only color art, as a rule, is being handled as the story describes because the Post does not, as yet, have a printer capable of handling color.

The second error concerns our circulation. We are proud that we have 140,000 subscribers, not the 40,000 the story cited.

*Lawrence Meyer, editor, The Washington Post  
National Weekly Edition, Washington, D.C.*

## Look to IEEE standards for accurate UPS definition

The story "Some UPS essentials: A guide to different types of power backup" (MacWEEK, March 22) perpetuates confusion about the proper definition of line-interactive uninterruptible power supply (UPS). The story stated, "Strictly defined, a line-interactive UPS is a standby UPS with an output transformer. ..." This is one of several definitions we've seen.

The IEEE Standard 1100-1992, Section 8.2.9.2 defines a line-interactive UPS as one of two types of static UPS that provide continuous, nonbreak power to protected loads during a power outage.

Many manufacturers in the power-protection industry have latched onto the term line-interactive as a way to charge more money for their standby power systems. But the real test is not whether a unit has an output transformer but whether it provides no-break power.

*Scott Knickelbine, senior technical writer  
Best Power Technology Inc., Necedah, Wis.*

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; Internet, letters@macweek.ziff.com; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

## The Mac Manager

### Getting to the bottom of your electronic mail



DON CRABBE

How many electronic-mail messages would you estimate you receive each day? My average is about 75 to 100 per day, seven days a week. They arrive in my in-box via AppleLink, MCI Mail, Internet, CompuServe, America Online, BIX and sources too obscure to list here.

That means if I miss reading my mail for even a day because I'm sick or I'm traveling and have no phone access, I'll have 100 or so messages waiting to be read and responded to in one way or another. Most of you have the same problem. Our E-mail traffic has grown steadily over the past several years to the point that it has become an onerous obligation just to scan it each day, let alone actively deal with it. And since a measurable portion of it is junk, we need a strategy to separate the wheat from all this chaff.

**Evelyn Wood won't mind.** First of all, be ruthless. You must fight the urge to read each message in detail and respond in kind. You simply must learn to speed read your E-mail.

The natural reaction most of us have to E-mail is to consider it a conversation. But it is not conversation. Doing so only extends the time needed to handle it. We have to remember that E-mail is just the fancy electronic version of those insidious paper memos we used to bury each other in. But the critical difference with E-mail is that we can inter ourselves more efficiently.

Approach your E-mail the same way you would approach browsing the magazine rack at your newsstand. Learn to scan the headlines and the topic sentences so you can decide if a piece of mail is something you must deal with.

Since much of the mail you receive each

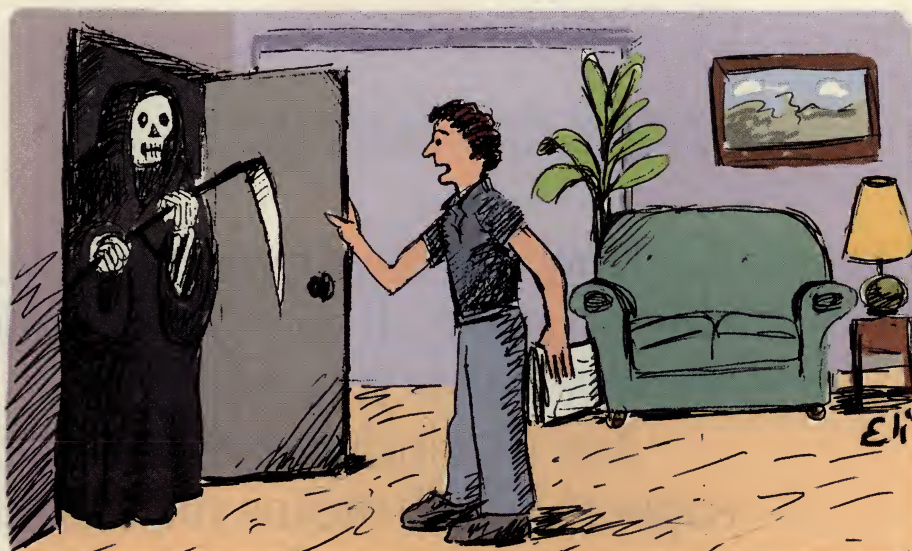
day may have been sent to a group mailing list, make a point to determine from the start whether a particular message requires your attention. If you learn to get good at this speed-reading/skimming technique, you'll eventually figure out how to blow through your mail at three to five times the rate you're handling it now.

**E-mail reciprocity.** Next you should work on the second phase of improving your E-mail processing productivity: learning when to respond.

Although it might seem like a good idea that you respond to E-mail that specifically asks for a reply, doing so will really slow you down. Here's where your experience and judgment have to be tapped: When does a message really warrant you taking the time to respond?

Use a kind of E-mail triage system to help you make the decision. Consider the source of the message (is it from someone outside your company, a staffer, your boss, your boss's boss?), the apparent urgency of the message, and (this one is the tough one) your ability to actually give a cogent and effective reply. How many times have you replied to a message just to be friendly, even though you really had no substance to add? Doing so may be good manners, but it takes time away from direct interactions with the people who work for and with you.

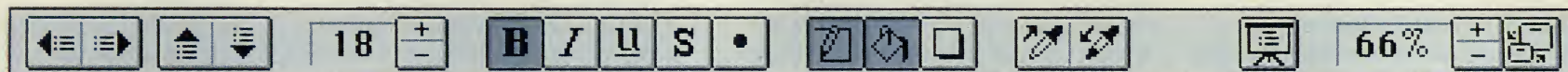
I want to hear from you about how you're handling the E-mail explosion in your shops, if you've evolved personal strategies and are using any technology to help you cope. In future columns, I'll explore other aspects of this issue. □



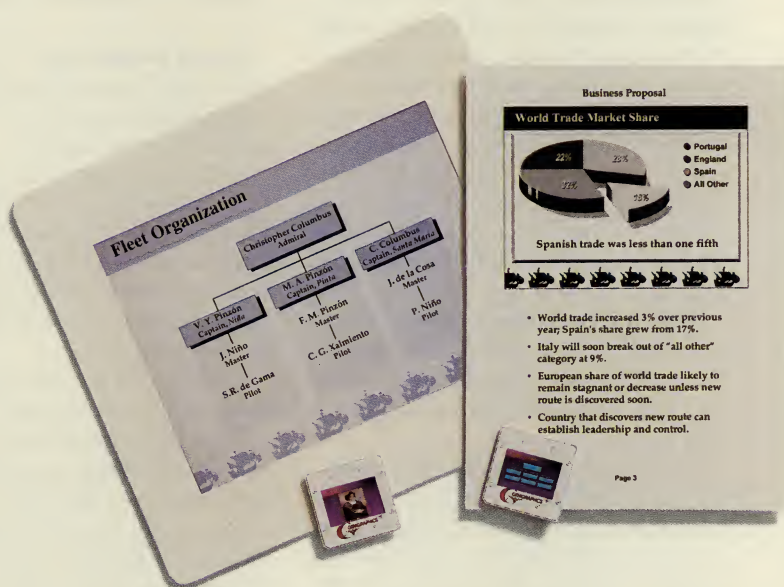
"Not yet! My PowerBook 180 is still on back order."



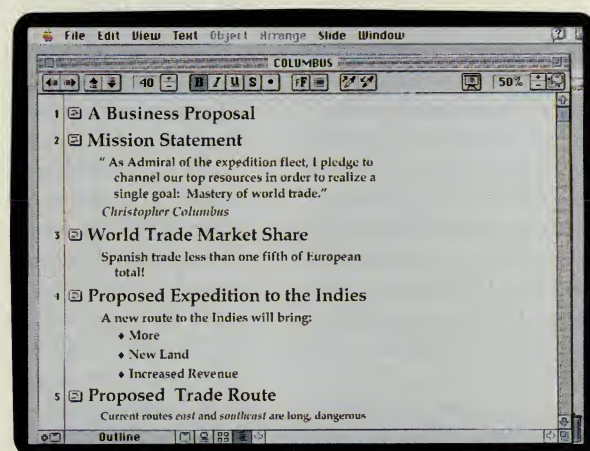
# New PowerPoint 3.0. tools make power



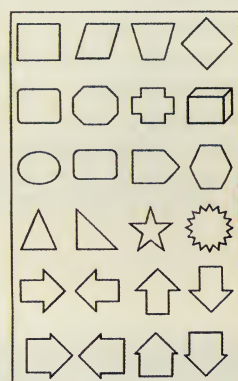
*The toolbar. A powerful way to save time. Because now the most commonly used features are just a point and a click away.*



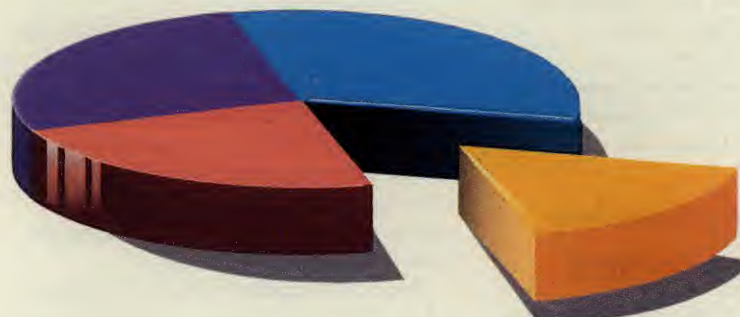
*Output you have to see to believe. Creating sharp-looking overheads, 35mm slides or speaker's notes has never been easier.*



*WYSIWYG Outline view lets you create and work with the content of your entire presentation as an outline. Plus, full text formatting capabilities let you see and edit fonts, sizes and styles right in Outline view.*



*Presenting the Shape tool. Now making diagrams is quick and easy. There's a palette of 24 adjustable shapes to choose from.*



*Get graphical. 84 different graph styles to pick from, including 3-D graphs with rotation and perspective control.*

Now you have everything you need to make all your presentations as powerful as your ideas.

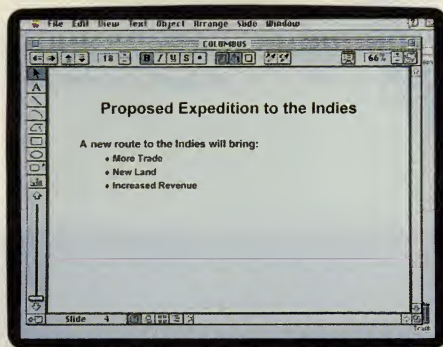
And that includes cross-platform support. Which means you can share

files with PowerPoint 3.0 for Windows™ directly. No translation necessary.

Best of all, you can upgrade to PowerPoint 3.0 for only \$129. This offer is valid for everyone who is



# Because powerful ful presentations.



With Anytime Templates, you can apply one of 160 professionally designed templates or use any other presentation as a template. Anytime.

For polished, professional electronic presentations use automatic build slides with flying bullets, transition effects, on-screen notation, sound and video.



(800)426-9400



You can upgrade to PowerPoint 3.0 and all these powerful features for only \$129.\*



For your copy of the Microsoft® PowerPoint® version 3.0 upgrade, visit your nearest reseller or pick up the phone and push these buttons: (800) 426-9400.

The PowerPoint presentation graphics program fully supports QuickTime™ and System 7,™ and is part of a complete line of powerful Microsoft applications for the Macintosh®.

using PowerPoint 2.01 or older, Aldus® Persuasion®, or any other competitive presentation graphics program.\*

So get your hands on PowerPoint 3.0 for the Macintosh. And before

you know it, you will find yourself in a position of power.

**Microsoft®**  
Making it easier



# Printers

With ever-improving printer technology comes the advantage of steadily decreasing costs of new equipment and the disadvantage of guaranteed obsolescence of your current gear. In this semiannual Special Report, MacWEEK examines the advances in 600-dpi, portable and PostScript printers that have pushed prices down to new lows. We also look at how you can get the most out of your old LaserWriter and PostScript clones.

## Inside

**Portable printers on the road**  
Page 41

**PostScript printers  
for less than \$1,000**  
Page 44

**Upgrading Apple printers**  
Page 46

**Printing posters from the Mac**  
Page 48

**The rise and fall  
of PostScript clones**  
Page 50



JOHN GREENLEIGH

## New laser printing engines give high resolution at lower prices

By Bob Weibel

Until late last year, almost all printers sporting true 600-by-600-dpi resolution or better were priced at more than \$10,000. Now, thanks in large part to a new generation of laser engines from Canon U.S.A. Inc., many 600-dpi printers go for less than \$3,000.

Of course, a lot of 300-dpi PostScript printers are priced in the \$1,500 range, but many users are willing to pay more for sharper type and smoother tints and halftones. Also, printers based on Canon's LBP-BX engine offer a triple whammy: 600 dpi, tabloid-size printing and a low price.

In general, all tabloid-size 600-dpi printers now on the Mac market are PostScript

clones, in sharp contrast to the letter/legal-size models, which all feature PostScript interpreters licensed from Adobe Systems Inc. Still, whatever the mix of features, new 600-dpi models are hitting the shelves every month. Here are the hot new models priced at less than \$10,000, available at press time.

**Letter/legal eagles.** Apple wasted little time joining the 600-dpi trend, releasing the LaserWriter Pro 600 and Pro 630, based on the 8-page-per-minute Canon LBP-EX engine. Both the Pro 600 and 630 now incorporate FinePrint, Apple's edge-smoothing technology, and Apple's PhotoGrade gray-scale enhancement. However, FinePrint and Photo-

GgG



Grade can be used only in 300-dpi print mode.

Brian McCarthy, owner of McCarthy Advertising of Boulder, Colo., purchased the Pro 630 with finer type and gray scale in mind.

"There's quite a bit of photography in our pieces for local ski areas," McCarthy said. "I'm more confident showing 600-dpi type and gray scale to my clients."

McCarthy said that, partly because of the limits of 300-dpi laser printer quality, many clients don't like to review and make changes to an ad until they can see a more convincing version, often at the pre-press proofing stage. He said he believes more clients will be willing to work with the proofs from his Pro 630.

The 300-dpi LaserWriter Pro 600 is also based on the LBP-EX engine. In addition to the two paper trays (100- and 250-sheet trays are standard on Pro models), Apple provides an optional 500-sheet feeder and an optional envelope feeder.

The Pro 630 also has two SCSI ports, one for an internally mounted hard drive for font storage and a traditional external port. Apple also built an EtherTalk connection into the Pro 630.

**Split personality.** The first printer on the market to sport the Canon EX engine, the standard PC-oriented Hewlett-Packard Co. LaserJet 4 is also available in a Macintosh-compatible configuration, the LaserJet 4M.

Definitely dual-personality, the 4M incorporates Adobe PostScript Level 2 and a LocalTalk port while, of course, remaining as PCL 5-compatible as you can get. EtherTalk is optional, and no SCSI port is available.

Dr. James R. McCarty, a dermatologist based in Fort Worth, Texas, uses the LaserJet 4M to print forms and brochures for his practice. "I used to take everything to an image-setter bureau because 300 dpi wasn't sharp enough," McCarty said. "The LaserJet 4M has been the solution to this problem; I haven't had to go back to the service bureau since I bought it."

LP Baier Inc., a benefit administration company based in McLean, Va., uses Data-products Corp.'s LZR 965 to produce numerous and ever-changing forms. "I needed a higher resolution to produce better gray screens for form backgrounds," said President Rick Snyder. "Printed on bright white laser paper, it's almost phototypeset quality—definitely good enough for our purposes."

If print volume concerns you, consider the 10-ppm IBM LaserPrinter 4029 10A from Lexmark International Inc. Book author Roger Elwood of Agoura Hills, Calif., uses four LaserPrinter 10A printers for gang-printing lengthy manuscripts.

"Ten pages per minute really makes a difference," Elwood said. "Together they're faster, cheaper and more reliable than a single 20-ppm printer, like the QMS Model 2000." Elwood also said he feels his IBM printers produce darker, crisper and more readable text than the LaserJet 4M at the speed he needs. Unlike all other printers in this survey, the 10A lacks serial and parallel connections for attaching to IBM PCs and compatibles.

**To the tabloids.** The Canon LBP-BX engine has brought tabloid-size page printing to less than \$4,000. That price breaker is the Xante Corp. Accel-a-Writer 8100, at \$3,995. MacPac Communications, a desktop publish-

See 600 dpi, next page

# Printing on the road: Have type, will travel

By Charles Rubin

**P**ortable printers seem a natural part of the equation for a PowerBook-based mobile office. Small, light and battery-powered, these printers can deliver first-rate copy in conference rooms, hotel rooms or even on airplanes.

But while on-the-spot printing has distinct advantages, using a portable printer involves some compromises. Before you add a few extra pounds to your portable computing setup, you'll want to weigh these issues against the benefits of portable printing in your particular situation.

**Quite possibly the next necessity for successful business endeavors, portable printers offer output on the go for PowerBook-packing professionals.**

The original portable printer for the Mac was the Diconix 150M from Eastman Kodak Co. An inkjet device first introduced in 1989, it fits in a briefcase and weighs less than 3 pounds, including

batteries. GCC Technologies Inc.'s WriteMove I was essentially the same printer.

A descendant of that printer, the Diconix 180si, remains on the market, and it is still among the lightest of portables, but its 192-dpi print quality puts it a step behind newer models. Last year, GCC introduced its WriteMove II, which uses a thermal-transfer ribbon to deliver 360-dpi resolution.

This year, Kodak introduced a Mac interface kit for its Diconix 701, an inkjet model with 300-dpi resolution, and Mannesmann Tally Corp. announced the MobileWriterPS, a PostScript-compatible portable that provides 300-dpi print quality and is shipping now.

Another issue is font compatibility and selection. The original Diconix portable offered only a few fonts in fixed sizes, while the WriteMove I relied on GCC's implementation of Bitstream outline fonts. In contrast, the WriteMove II and the MobileWriterPS can use both TrueType and PostScript fonts (via Adobe Type Manager in GCC's case).

But while the newer GCC and Mannesmann Tally printers offer full font compatibility and better resolution, they have their disadvantages as well.

The inkjet cartridges on the Diconix and WriteMove II models can print about 500 pages, while the single-strike thermal ribbons on the WriteMove II and MobileWriterPS conk out after 15 pages or 150 pages, respectively.

Although the WriteMove II can use multi-strike ribbons that recycle a few times and, thus, last longer, the print quality deteriorates quickly after the first ribbon pass.

If ribbon life seems short, battery life is no better. The WriteMove II's batteries are good for only 12 to 15 pages; the Diconix 180 and 701 can produce about 50 and 100 pages,

See Portables, Page 43



Portable printers weigh in: The 2.5-pound WriteMove II from GCC Technologies and the 8.3-pound MobileWriterPS from Mannesmann Tally are shown above. Hewlett-Packard's 600-dpi LaserJet 4si is shown on the opposite page.

JOHN GREENLEIGH



## 600 dpi

From previous page

ing company in Hollywood, Fla., uses the 8100 to kick out camera-ready art for the biweekly tabloid magazine Medical Business.

"After comparing prices of other 600-dpi printers, we decided to go with Xante," said MacPac President Dannielle Kukar. "The 600-dpi print quality of the 8100 is wonderful." Previously, Kukar had faced the time and expense of sending out QuarkXPress files for 1,270-dpi photo-imagesetting.

Like other Accel-a-Writer models, you can install 512 Kbytes or 1 Mbyte of optional flash memory to permanently store fonts in the 8100.

MacPac opted for the \$200 1-Mbyte flash-memory upgrade, which it finds very handy, according to Kukar. You can also upgrade the 8100 to provide higher resolutions, equivalent to 800, 960 and 1,200 dpi.

CalComp Inc.'s CCL-600 isn't quite as good a deal because it comes with only 4 Mbytes of RAM, although it's shipping with 16 Mbytes as an introductory offer.

**Network tabloid printing.** For a few dollars more, the 860 Print System from QMS Inc. offers 600-dpi tabloid printing via the LBP-BX engine and the flexible network-connection, emulation-switching and font-management features of the QMS multi-tasking Crown architecture.

As personal computer hardware support manager for the Princeton Theological Seminary in Princeton, N.J., Bob Miller chose the 860 for both price and workgroup flexibility. For its networked printing and desktop publishing hardware, the seminary needs reliable emulation switching and font management because documents are produced in several languages.

"QMS emulation switching and job spooling are superior," said Miller, who also plans to add a QMS 1725 Print System 17-ppm workhorse to the network. The 860's 600-dpi tabloid output suits most of the seminary's publications.

"I have a lot of confidence in the type," Miller said. "We were looking at some more-expensive 1,200-dpi printers, but the differ-

## Resolution confusion: What is 'true' 600 dpi?

Some PostScript printers have featured 600-dpi resolution and beyond for several years, so why the excitement over the new 600-dpi engines?

For one thing, vendors of those early, low-priced, high-resolution printers didn't always make it clear that they could only emulate higher vertical resolution beyond the 300- or 400-dpi limit of earlier printer engines such as the Canon SX.

That's because vertical resolution depends on the rotation of the printer drum, which was accurate only to one-three-hundredth or one-four-hundredth of an inch increments. Special laser beam modulation techniques, sometimes called interline scanning, are used to compensate somewhat for the mechanical limitation.

The new, relatively inexpensive Canon BX and EX engines can now rotate the drum in one-six-hundredth of an inch increments, achieving 600 by 600 dpi without playing any games. Hence, they're referred to as "true" 600-dpi engines. Improved optics combined with finer and more uni-

form toner particles help guarantee the smaller dot size required for true 600-dpi resolution.

Still, some printers that use true 600-dpi engines offer or can be upgraded to "1,200 dpi," "800 by 800 dpi" or "960 by 960 dpi." Once again, they're using laser modulation to achieve higher resolution, or at least perceived resolution, especially in the critical vertical resolution.

Aside from viewing print samples, another way to compare resolution claims is to ask what "frame buffer" the printers use. If a vendor advertises "1,200 dpi," does that mean that a 1,200-by-1,200-dpi image is stored in printer page memory prior to hitting the page, or is it stored as a 1,200-by-600-dpi image?

The former requires more RAM, indicating higher printer value and perhaps visibly sharper images.

All of these higher-resolution techniques push the basic capabilities of each engine type, and the visible results may or may not strongly reflect the extra effort. — By Bob Weibel

ence in quality between the 600 and 1,200 wasn't worth the money for us."

When the Daily Herald newspaper, published in Arlington Heights, Ill., wanted a backup for its \$23,000 Varityper Inc. VT600W, it chose NewGen Systems Corp.'s \$4,995 TurboPS/660 B.

"Speedwise, it's much faster than the Varityper," said Robert Finch, graphics editor at the Daily Herald. "The type seems to be a tiny bit thinner, which I think is more consistent with the actual typefaces, and gray screens are better than those of the Varityper."

Both the TurboPS/660 B and the 1,200-by-600-dpi version, the TurboPS/1200 B, accept NewGen's Ethernet interface, which automatically switches among built-in EtherTalk, TCP/IP and Novell NetWare 3.11 protocols, making the printer accessible to Macs, Unix workstations and PCs.

At \$9,995, LaserMaster Corp.'s Unity 1200XL is the most expensive low-end 600-dpi printer. According to the company, LaserMaster chose the 600-dpi, tabloid-size Toshiba TN-7270 print engine because it produced

more consistent grays over extended areas.

The Unity 1200XL's PostScript-compatible interpreter and 135 built-in Type 1 fonts reside on an internal 20-Mbyte hard drive, which has room for about 200 additional fonts.

For John Batis, owner of Columbine Printing in rural Taos, N.M., the Unity 1200XL replaced his Compugraphic typesetting system when its lease expired.

"Since I do a lot of art reproduction and process-color work for the Santa Fe/Taos art market, I needed something good enough for my medium-quality work but which offered a good proofing system for the high-end work I do," Batis said.

Batis said the added benefit of the Unity 1200XL has been the excellent toll-free technical support he's received from LaserMaster, which is important because of his remote location. LaserMaster also sells the \$6,995 1200XL, which relies on a controller on a NuBus card in the host Mac but can be shared via EtherTalk.

David Ruppe, owner of Impact Publishing, a design company in Ashland, Ore., looked at the Unity 1200XL but recently settled on another printer based on the Toshiba TN-7270 engine, the 600-dpi SelectPress 600 from GCC Technologies Inc.

"The big selling points for us are the low price, the edge-to-edge printing on tabloid pages and the built-in 40-Mbyte hard drive," Ruppe said. GCC made some hardware changes, through Toshiba, that allow you to print all the way to the left and right borders of a page. According to the company, you can print to within 5 millimeters of the leading and trailing page edges without any problem.

**Price and convenience.** Although true 600-dpi laser printing isn't new, the low prices and convenience offered by the latest engines are.

It's only fair to mention that Printware Inc.'s letter/legal-size Professional-II was one of the first to break the \$10,000 mark, and although it is no longer inexpensive compared with Canon-based printers, its heavy-duty engine rates a 20,000-page-per-month duty cycle that still can't be beat.

Whether you're trying to print better-looking halftones at your desktop or save yourself the expense of PostScript imagesetting, you've never had better or cheaper options. □

## How 600-dpi printers compare

PRINTER MODEL	PRICE	PAGES PER MINUTE	BUILT-IN RAM (IN MBs)	MAXIMUM PAPER SIZE	MAXIMUM VERTICAL RESOLUTION	EXTERNAL SCSI PORT	BUILT-IN HARD DISK
Apple LaserWriter Pro 630	\$2,529	8	8	legal	600x600	•	
CalComp CCL-600	\$3,995	4*	4	tabloid	600x600		
Dataproducts LZR 965	\$2,445	9	8	legal	600x600		
GCC Technologies SelectPress 600	\$4,499	4*	8	tabloid	600x600		•
Hewlett-Packard LaserJet 4M	\$2,399	8	6	legal	600x600		
Lexmark LaserPrinter 4029 10A	\$2,499	10	5	legal	600x600		
LaserMaster 1200XL	\$6,995	4*	21	tabloid	1,200x600		
LaserMaster Unity 1200XL	\$9,995	4*	21	tabloid	1,200x600		
NewGen TurboPS/660 B	\$4,995	4*	12	tabloid	600x600	•	
NewGen TurboPS/1200 B	\$5,995	4*	20	tabloid	1,200x600	•	
Printware Professional-II	\$7,990	8	12	tabloid	1,200x600		•
QMS 860 Print System	\$4,595	4*	12	tabloid	600x600	•	
Xante Accel-a-Writer 8100	\$3,995	4*	12	tabloid	1,200x1,200	•	

\* The Canon LBP-BX engine used in this printer is rated at 4 ppm when printing tabloid sheets and 8 ppm when printing on letter-size paper.



## Portables

From Page 41

respectively; and the heavier Mannesmann Tally model can power itself for 150 pages. Batteries for these printers add up to half a pound to their total weight, so many users rely on AC power adapters instead.

**Hard-copy hotel.** Despite the compromises of portable printing, there's a lot to be said for having quick output on the road. Arthur Greenwald of Arthur Greenwald Productions in Arlington, Mass., uses a PowerBook 170 and a GCC WriteMove II to print scripts and proposals for his television advertising and production business.

**"I can crank out a quick, laser-quality proposal on my letterhead from my hotel room and send it off by overnight express. Being able to get a proposal on the customer's desk the next day has won a lot of business for me."**

— Arthur Greenwald

laser-quality proposal on my letterhead from my hotel room and send it off by overnight express. Being able to get a proposal on the customer's desk the next day has won a lot of business for me."

Greenwald started his mobile computing setup with a Macintosh Portable and a GCC WriteMove I, so the lighter PowerBook and higher-quality WriteMove II have been a decided improvement. "The new printer is about as big as a roll of tinfoil," he said. The printer, AC adapter, extra ribbons and his business letterhead all pack in an airline carry-on along with his PowerBook.

Graduating from the 192-dpi WriteMove I has also expanded Greenwald's uses for his

"It's tremendous to be able to print something on the spot or at night in my hotel room," he said. "I can have revised documents ready to show a client first thing the next morning, so I can get feedback immediately."

The printer also helps Greenwald respond to new business opportunities more quickly. "I can crank out a quick,

## Remote printing lets users lose luggage, keep up with business

For some PowerBook users, the best portable printer is no printer at all. Dan Siegel, an attorney for the Menlo Park, Calif., office of the New York-based firm of Weil, Gotshal & Manges, takes his PowerBook 180 to client offices wherever he goes, but he attacks the printing problem by transmitting his files to printers or fax machines.

Much of his remote printing is done to printers back at the office. Using a fax modem from Global Village Communication Inc. on his PowerBook, Siegel calls his Menlo Park office and taps into the office's Ethernet network via a Shiva Corp. NetModem/E, although anyone using AppleTalk Remote Access could also accomplish the same thing.

"I call in from home, or clients' offices, or from out of town when I need to print something at the office that someone else needs to work with," Siegel said. "Often, I have one document on my PowerBook but there are others at the office that need to be sent out with it."

Siegel prints the document to one of the firm's five network printers, and then a secretary combines it with other documents and a fax cover page for transmittal to another location.

For example, he said, "I recently got an E-mail document on a weekend, and I printed it out at the office on a printer that's next to the desk of the secretary who would work on it. When she came in Monday, the document was right there, along with instructions with what to do with it."

Although he travels extensively, Siegel hasn't found the need for a portable printer. "When I'm at a client's office and they have Macs," he said, "I'll use one of their printers. Otherwise, I'll just fax a document to my location. There's typically a fax machine almost everywhere I go, so I'll use the fax modem to fax a document to that machine, and then I have my hard copy. If it's a plain-paper fax, the print quality isn't that much worse than with a portable printer."

— By Charles Rubin

portable printer. With its single-strike ribbon, he said, "The quality is good enough that we've printed video titles on paper and then scanned them into a video editor for production." When draft quality will do, he uses the multistrike ribbon.

As for battery-life problems, Greenwald hasn't encountered them because he doesn't use battery power. "The only situation where I don't have AC power is on an airplane," he said, "and I've never been able to get much work done on those tray tables anyway."

**Contracts on the fly.** Networking consultant Dorian Cougis, director of network technology for Bear River Institute in Berkeley, Calif., has tried several portable printing solutions because having his own printer on hand makes consulting assignments go more smoothly.

"When you're in a meeting and you have a PowerBook and your own printer sitting right there, you can make decisions, print up an

agreement, have some copies made and get the agreement signed on the spot," he said.

Even when he's not making a deal, Cougis takes a portable printer along because trying to use the client's printers has caused friction in the past. "You can interfere with the normal flow of work at the office," he said.

"When you're printing a 20-page document on the boss' secretary's printer, and she's waiting for a memo to come out of the same printer, it's not a great situation."

When Cougis first switched to portable printing, he used a Diconix 180si or sometimes carried an Apple StyleWriter with him.

Now, he uses a GCC WriteMove II, but he's not entirely satisfied. "It's slow, and you can't get ribbons for it," he said. "It's impossible to find a replacement ribbon when you're on the road, and I even have trouble getting them here in the [San Francisco] Bay area. I went to GCC's booth at the Macworld show last January, and then I went to every vendor who was selling the WriteMove II, and nobody had a single-strike ribbon for it."

Another portable-printing disadvantage is the WriteMove II's single-sheet feeder. "You have to feed pages one at a time," Cougis said, "and you have to click an OK button in the print driver's dialog box after you load each page. It's really a pain." The newer Diconix 701 and MobileWriterPS solve this problem with larger sheet feeders.

**Portability is relative.** If your application doesn't require battery power, you might also consider other compact printers that don't have a battery power option, such as Apple's StyleWriter II or Canon U.S.A. Inc.'s Bubble Jet.

Although the StyleWriter is more than twice as heavy as the WriteMove II, it has its own paper feeder and doesn't suffer from ribbon life or availability problems.

Your particular application and degree of mobility will determine how you evaluate weight, price, output quality, ribbon life and resolution in your printing equation. But with the PowerBook's success in the business market, the range and quality of portable printing solutions is bound to grow. □

## How portable printers compare

NAME	KODAK DICONIX 180SI	KODAK DICONIX 701	MANNESMANN TALLY MOBILEWRITERPS	GCC WRITEMOVE II
Print technology	Inkjet	Inkjet	Thermal transfer	Thermal fusion
Maximum resolution (dpi)	192x192	300x300	300x300	360x360
Prints on transparencies?	No	No	Yes	Yes
Font families/sizes	3/6	4/10	11/35	6/21
PostScript compatible?	No	No	Yes	No
TrueType/ATM compatible?	No	No	Yes	Yes
Weight with battery	3.5 lbs	5.9 lbs.	8.3 lbs	2.5 lbs
Weight without battery	2.9 lbs.	5.6 lbs.	n/a**	2.0 lbs.
Cartridge/ribbon life	500 pages	800 pages	150 pages	75 pages*
Battery life (continuous printing, best quality)	50 pages	100 pages	150 pages	12-16 pages
Sheet-feeder capacity	1 page	30 sheets	80 sheets	1 sheet
Price	\$329	\$558***	\$999	\$599

\*With multistrike ribbon. \*\*Battery required for operation. \*\*\*Includes \$79 interface kit.



# PostScript printer prices sink to lowest level ever

By Larry Stevens

If you ran out and bought one of Apple's original PostScript LaserWriters, you probably paid \$6,996. If you were patient enough to wait until about 1990, you got the same functionality from Apple for about \$3,000 and from third-party vendors for about \$300 or \$400 less.

Now for the first time, you can get PostScript-quality printing along with reasonable speed for less than \$1,000. And perhaps the biggest surprise of all is that the downward trend is not being lead by third-party Young Turks but by three stalwarts: Apple,

Digital Equipment Corp. and Texas Instruments Inc.

In February, Apple introduced two 5-page-per-minute printers, each priced under \$1,100 and expected to carry less-than-\$1,000 street prices. The low end is the QuickDraw-based LaserWriter

Select 300, which will retail for \$819.

The most expensive model in this group is the PostScript-based LaserWriter Select 310, for \$1,079, which comes standard with 13 scalable Adobe PostScript Type 1 fonts. The 310 includes PhotoGrade enhancement software.

Last fall, DEC introduced the DEClaser 1152, a 4-ppm, 17-font PostScript printer. As of this writing, it retails for \$999 (after a manufacturer's rebate).

The DEClaser 1152 includes some features not found on Apple's printer, including PostScript Level 2 and automatic switching between PostScript and HP PCL 4 protocols.

The final entry in this new low-end market is Texas Instruments' MicroWriter 17, which dealers are now offering for less than \$1,000. This is not actually a laser printer since it uses LED technology. But output quality and performance are the same as in laser printers.

The MicroWriter 17 has 17 fonts and prints 5 ppm. It also features PostScript Level 2 and automatic switching.

**Micro-prices printer.** According to Marco Boer, senior analyst with market research company International Data Corp. of Framingham, Mass., these new products, especially Apple's and DEC's, represent the manufacturers' wish to garner the low-end market.

"With prices like these, third-party players are going to have a hard time," Boer said. "Apple's and DEC's brand recognition should allow them to demand a premium."

Boer points out that Apple was able to set such a low price in part by using a Fuji Xerox engine instead of a Canon engine and by installing PostScript Level 1 instead of Level 2. Despite this "de-featuring," most experts said that considering current component prices, there isn't much room for printer makers to cut prices further.

"I don't think they can make money at that price point — we know how much those engines cost," said Donald Parker, executive vice president of products and technology at QMS Inc., which sells midrange laser printers.

Boer agreed. "Apple is used to making a comfortable profit margin on its products. It won't be able to do the same — if it makes a profit at all — with the new printers," he said.

**Grappler II** from Orange Micro Inc. of Anaheim, Calif., is a cable that not only translates serial signals to parallel signals but also translates ImageWriter commands into code that can be understood by dozens of DOS-based printers. As a result, the Mac can control the printer using Apple's ImageWriter driver.

**PowerPrint** from GDT Softworks Inc. of Burnaby, British Columbia, provides a serial-to-parallel cable plus a number of print drivers. According to GDT, the PowerPrint driver will allow the Mac to print on more than 1,000 different printers.

**Inkjet printers.** Inkjet printers work by spraying a microscopic stream of ink from the print head. They're quiet, and under ideal conditions that include low humidity and good-quality paper, their output is about as good as that produced on laser printers. But they are slow, printing from one-half to 1 page per minute.

Still, for about the price you had to pay for an ImageWriter just one year ago, you can now buy an inkjet printer that provides near-laser-quality output. Keep in mind that to approach laser-quality output, inkjet printers require a good (and expensive) grade of paper.

Apple's 360-dpi StyleWriter and Hewlett-Packard Co.'s 300-dpi DeskWriter are the two major Mac inkjet printers.

If portability is important, Eastman Kodak Co.'s Diconix series inkjet printers are lightweight and run on batteries. The Diconix 701 has 300-dpi output, and the Diconix 180si outputs at 192 dpi. — By Larry Stevens

## Alternate low-cost printer technologies

Laser printers represent the dominant technology for black-and-white printing. But lower-cost technologies still have their place.

Laser printers are, for general purpose, black-and-white printing, the most popular option. They are fast and provide excellent output on many different kinds of media.

However, primarily for reasons of economy, two other printer technologies, dot matrix and inkjet, still attract some users.

### Dot-matrix printers.

Because dot-matrix printers are slow, noisy and generally produce low-quality output, inkjet and QuickDraw laser printers are nudging them out of the low end and into the dust heap of history.

Still, dot-matrix machines offer two advantages over other technologies: They can print on multiple forms, and you can pick one up, new or used, for a song. Used Apple ImageWriters are hard to find at dealers, but when available, they cost about \$150.

If you want to benefit from the low cost of dot-matrix printers and need relatively good-quality output, you can turn to the DOS world. A number of DOS dot-matrix printers, including some from Epson America Inc. and Panasonic, have resolutions of 360 dpi — equal to that offered by laser or inkjet printers.

To connect a Mac to a DOS printer, you need a cable that translates the Mac's serial output to the DOS printer's parallel input. And since you won't be able to install the printer's DOS-based driver in your Mac's System folder, you'll need some alternative means of controlling the printer.



PHOTO BY JOHN GREENLEIGH; ILLUSTRATION BY GARY JAEGER

The LaserWriter Select 300, one of Apple's least expensive PostScript printers, lists for \$819.

**Users the winners.** The big winners in this grab for the low end are users, many of whom may no longer have to settle for non-PostScript laser printers.

"As far as I'm concerned, there's nothing low end about it," said George Walther, professor of information systems at the University of Mary Hardin-Baylor in Belton, Texas, and a beta tester of the TI MicroWriter.

Walther, who does "light" desktop publishing as well as general correspondence, said the MicroWriter's performance and functionality are equal to or better than his older and more expensive laser printers.

While Walther said he realizes that there are some differences between the MicroWriter and present-day midrange laser printers, he insisted "none of those differences has any affect on the way we work." □

## What you're giving up

The new crop of near-\$1,000 printers provides a level of functionality and performance adequate for many small- to medium-size business users.

However, when opting for a low-priced printer, you should know what you're not getting as well as what you are getting. While the low price of these printers is good news, here's what the vendors had to leave out.

**Speed.** Digital Equipment Corp.'s DEClaser 1152 is rated at 4 pages per minute, and Texas Instruments Inc.'s MicroWriter and Apple's LaserWriter Select series are rated at 5 ppm. Many newer midrange machines print from 8 to 16 ppm.

**Number of fonts.** The DEClaser 1152 and MicroWriter 17 come standard with 17 Adobe PostScript fonts; the LaserWriter Select has 13. Higher-priced machines typically come equipped with 35 or more fonts.

**Duty cycle.** Duty cycle is the recommended maximum number of pages per month a printer should produce before its longevity is diminished. The DEClaser 1152 has a duty cycle of 6,000 pages; the MicroWriter is rated at 5,000. (Apple hasn't released duty cycle figures.) More expensive machines have duty cycles of 10,000 or more pages per month.

**Paper tray size.** The DEClaser 1152 and MicroWriter 17 have 250-sheet trays. Many midrange machines have trays with double that capacity. (Apple will offer an optional 500-sheet tray in its LaserWriter Select series.) — By Larry Stevens



# Does this remind you of your system folder?



1/2 Are you the sort of person who accumulates fonts, DAs and sounds as though they were going out of style?

If you are, then your system folder is as crowded as this closet.

And almost as organized.

Which is no great problem, as long as you don't mind scrolling through menus that disappear off the bottom of your screen.

But if you think scrolling is for Ancient Greeks, it's time you did what over 250,000 people have done before you.

Get out of the closet. And get into Suitcase.™

Suitcase is the award-winning utility that makes it easy to sensibly organize and promptly access your rapidly growing collection of fonts, DAs, FKEYs and sounds.

Which means you can spend more time using them and less time—a lot less—rummaging around looking for them.

You'll also spend a lot less time accessing new fonts from within applications—especially if you have System 7.

Because System 7 still makes you quit and re-start your applications before you can use a fresh font.

Suitcase doesn't.

And System 7 hasn't got a clue about which fonts you were

using during your last session.

Suitcase does. And loads them for you automatically the next time you switch on your Mac.

You can pack each suitcase with just a single font or as many as 800 of them, up to 64 DAs or any number of FKEYs and sounds.

You can also group suitcases into sets, then summon all the luggage that belongs with a particular project at the click of a mouse.

Tips are optional. But here's one for those who have neither the time nor the patience for resolving font ID conflicts.

Get Suitcase. It eliminates them. Along with a lot of wasted disk space.

That's right, Suitcase compresses your screen font and sound files by as much as 60%.

It even lets you park your screen and printer fonts on a server for all to share, making each disk on the network that much more spacious.

Like all Fifth Generation products, Suitcase is backed by our one-year money-back guarantee

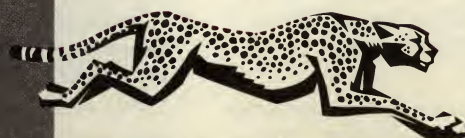
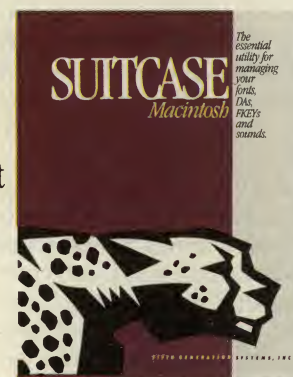
and our vaunted 24-hour toll-free customer support.

Finding out more about Suitcase is also toll-free. So pick up the phone and dial 1-800-765-8209.

Ask for Housekeeping.

<b>Aachen</b>
<i>Alison</i>
Avant Garde
Baskerville
Berkeley
Bodoni
Bookman
Caledonia
✓ <b>Chicago</b>
<i>Fresh Script</i>
Futura
Galliard
Garamond
Helvetica
Italia
Janson
Kabel
Los Angeles
Lubalin Graph
Lucida
<b>MACHINE</b>
Monaco
New York
Optima
Palatino
<b>San Francisco</b>
Times
Trump
Univers
Versailles

*Can't remember the difference between Versailles and Monaco? Not to worry. Suitcase displays your typefaces right in the menu.*



FIFTH GENERATION SYSTEMS, INC

Outside U.S. & Canada  
call: (44) 494-442223



# LaserWriters get a second wind with variety of upgrade options

By Bob Weibel

**Y**our Macintosh office keeps expanding, and suddenly that mighty LaserWriter you purchased a couple of years ago doesn't seem to be pulling its weight. Perhaps you can't download all the fonts you're using. Maybe it's stalling on your new page designs.

Sure, someday you'll need a new printer, but in many cases you can forestall the inevitable by upgrading your existing LaserWriter model with more RAM, a faster processor and expanded paper-feed options.

**RAM is good.** Upgrading your LaserWriter's memory gives you more room for manually downloaded fonts. Also, because PostScript Level 2 can dynamically allocate memory, that extra RAM will help crunch complex print jobs.

There are different RAM upgrade options for the various LaserWriter models, from both Apple and third-party memory suppliers. According to experts, many mail-order Macintosh memory vendors can recommend and supply the correct memory options for most LaserWriter models.

Memory upgrade kits from Apple are definitely more expensive than taking the do-it-yourself, mail-order route, although Apple's pricing does include installation at authorized service centers (see story, right).

**Brain transplant.** Another way to put more punch into an aging LaserWriter, at least for some models, is to spring for a controller upgrade.

Your LaserWriter SC, IINT or IINTX, for example, can enjoy new life as a IIf or IIfg via Apple's \$1,015 IIf 4-Mbyte controller board or the \$1,455 8-Mbyte IIfg controller board, which also upgrades a IIf to a IIfg. Apple's \$989 Personal LaserWriter NTR controller trade-in will raise a Personal LaserWriter SC or NT to a RISC-based NTR.

Xante Corp. offers a range of Accel-a-Writer, RISC-based, PostScript-compatible controller upgrades for most LaserWriter models, including the LaserWriter and LaserWriter Plus. Priced at \$1,195, these boards add up to 16 Mbytes of RAM, 600-dpi resolution enhancement, SCSI ports, gray-scale enhancement and automatic port switching.

Guy Pacot, graphic designer for Copy Copy of Frisco, Colo., said he was initially skeptical of Xante's speed claims, but he's not anymore. "It would take our IINT 25 minutes to print a particular document for a frequent customer," Pacot said. "Now with our Accel-a-Writer II upgrade, it prints in four minutes."

**Paper chase.** In printing bills and letters on its LaserWriter Plus, sometimes 500 at a time, the staff of the cardiology department at Children's Hospital in Houston quickly tired

of refilling the printer's 200-sheet paper tray.

According to Kevin McCormick, the hospital's computer-repair technician, a \$495 Jet-Tray 1500 single-bin sheet feeder from Genesis Technology solved the problem. "It's a simple plug-and-play unit," McCormick said. "Attach the power cord, and that's it."

As a technician, McCormick said he appreciates the JetTray 1500's reliability. Two available models work with most Canon-engine printers. Gradco (USA) Inc. sells the HCF-1000, compatible with LaserWriter II models.

Mat Ghoudjian, national director of technology for the law firm of Howrey & Simon in Los Angeles, favors multibin sheet feeders from BDT Products Inc.

"For our various LaserWriters, we use BDT's six-bin feeders, which we load with letterhead, second-page, plain bond, legal papers and

envelopes," Ghoudjian said. "Some of our staff would fight if you tried to take away their feeder," he said, because they find them so convenient and reliable. Each paper bin holds 220 sheets, and the envelope bin holds 50 envelopes.

**Font cards.** For only \$129, you can add 25 additional Adobe PostScript Type 1 fonts to the 35 built into your LaserWriter IINTX.

FontCard NTX from Sonnet Technologies Inc. plugs onto the IINTX controller board and includes ROM versions of Adobe Garamond, Helvetica Light, Helvetica Black and other assorted PostScript typefaces.

Jeffrey Schimsky, graphics coordinator for the Senn-Delaney Leadership Group consulting firm in Long Beach, Calif., found the FontCard easy to install.

"If I use Helvetica Black in a 50-page document, a lot of time is spent automatically downloading the font, unless I use a utility to manually download fonts," said Schimsky, who prefers not having to think about font downloading. "Now it's just like using Avante Garde or any other built-in font."

The moral of the story is that if your LaserWriter isn't keeping pace, stop complaining and consider an upgrade or even two. That way, your initial investment may start paying off in new ways. □

## To get a little more power, all you need is a little more RAM

Each printer has different RAM capabilities. Whichever way you go, here's what to ask for, starting with the latest models.

► **LaserWriter Select 310, 300:** The 310 ships with 1.5 Mbytes soldered to the logic board. A single 72-pin SIMM socket accepts a 1- or 4-Mbyte 80-nanosecond SIMM, which will max out at 5.5 Mbytes. These new 72-pin SIMMs are also referred to as "interleaved memory."

The 300 has only half a megabyte on the motherboard, which is expandable to 4.5 Mbytes using standard Mac 30-pin 1- or 4-Mbyte SIMMs. Apple's 1-Mbyte upgrade kits for the 300 and 310 cost \$89 (parts #M2078G/A and #M2093G/A, respectively), while the 4-Mbyte upgrade for the 310 costs \$269 (part #M2094G/A); installation at an Apple-authorized service center is included for both.

► **LaserWriter Pro 600, Pro 630:**

These new LaserWriter models both sport two 72-pin SIMM slots, and most of them have shipped with one 8-Mbyte SIMM installed, although a few may contain two 4-Mbyte SIMMs, according to Apple.

When you are shopping for mail-order RAM, technical staff at Technology Works Inc., a mail-order chip vendor in Austin, Texas, suggests you ask for 70-nanosecond or 80-nanosecond Bi-32 72-pin SIMMs, in densities of 4 Mbytes (\$149), 8 Mbytes (\$289) or 16 Mbytes (\$599). Commodity RAM prices fluctuate quickly, so these prices are approximate.

You can mix SIMMs of different densities to get the configuration you want. For example, if you pop a 4-Mbyte SIMM next to the 8-Mbyte SIMM, you'll total 12 Mbytes. By adding two 16-Mbyte SIMMs instead, you can increase these printers to the 32-Mbyte maximum RAM memory.

► **LaserWriter IIf, IIfg:** These printers have two banks of SIMM slots, four slots to a bank. The IIf ships with 4 Mbytes, although it originally came with 2 Mbytes, using eight 256-Kbyte SIMMs.

The IIfg now ships with 8 Mbytes, although it originally shipped with 5 Mbytes, using four 1-Mbyte and four 256-Kbyte SIMMs. To expand, you must add standard Mac SIMMs, either four 1-Mbyte or four 4-Mbyte SIMMs to a bank, for a maximum of 32 Mbytes. However, according to experts, you can't mix RAM densities within a single bank.

► **Personal LaserWriter IINT:** This printer shipped with 2 Mbytes in two SIMM slots. According to Paul Marto, product manager of Memory Direct, a RAM vendor in Huntington Beach, Calif., you can replace the two 1-Mbyte SIMMs with two 4-Mbyte, Mac 30-pin, eight-bit, 80-nanosecond PAL-chip SIMMs.

► **Personal LaserWriter IINTR:** This printer ships with 2 Mbytes soldered onto its logic board plus one 72-pin, 70-nanosecond or 80-nanosecond, 1-Mbyte SIMM in the printer's single SIMM slot. Your only expansion option is to yank that out and put in a 2-Mbyte SIMM for a net gain of 1 Mbyte. Memory Plus sells the upgrade for \$65.

► **LaserWriter LS:** The LS ships with 512 Kbytes soldered on the motherboard, with sockets for 512-Kbyte RAM (four chips). Memory Plus, at (800) 388-7587, was the only vendor we could find offering an upgrade kit, for \$25.

► **LaserWriter IINT and IINTX:** The IINT shipped with 2 Mbytes of RAM, which you can't expand, unless you upgrade the IINT to IIf or IIfg.

However, the IINTX has three SIMM banks, each holding four SIMMs, for a total of 12 SIMMs. It shipped with 2 Mbytes of RAM: four 256-Kbyte, 64-pin, 80-nanosecond Mac IIfx SIMMs in the first two banks.

To spice up your life you can add either 256-Kbyte, 1-Mbyte or 4-Mbyte 80-nanosecond IIfx SIMMs (four to a bank, no mixing), placing the highest-density SIMMs in the lowest-numbered slot.

For example, to add 4 Mbytes to a IINTX you'd add four 1-Mbyte Mac IIfx SIMM modules in Bank 0 and leave four 256-Kbyte SIMMs in Bank 1, for a total of 5 Mbytes. Depending on the combinations you install, you can add up to 12 Mbytes of RAM.

However, according to Memory Direct's Marto, if you put four 1-Mbyte SIMMs in the first bank and move four of the 256-Kbyte SIMMs to Bank 2, for a total of 6 Mbytes, the IINTX will recognize only the first 5 Mbytes because of a limitation of the IINTX logic board.

As an example of mail-order pricing, Memory Direct charges \$129 for each 4-Mbyte IIfx SIMM and \$30 for 1-Mbyte IIfx SIMMs. — By Bob Weibel





# Every Mac Deserves Big Color

When it comes to big-screen color, your LC, SE/30 and Performa 400 now have the same potential as a Mac® II or Performa 600. The new Lapis™ ProColorServer™ display cards bring full color capability to every color-capable Mac. That means really big screens – up to two full pages. And as many colors as you want – 16,777,216 to be exact.

Now you can add 24-bit color to your LC. Expand your SE/30 with a 21-inch color display. Bring out the colorful best in your Mac II or Performa 600.

Lapis has a full range of display products that improve the look and productivity of all types of Macintosh® computers, from the Plus to the Quadra™. With the highest reliability and best prices in the industry.

Call **1-800-43-LAPIS** today to find out more about ProColorServer display cards. **Your Mac deserves it.**

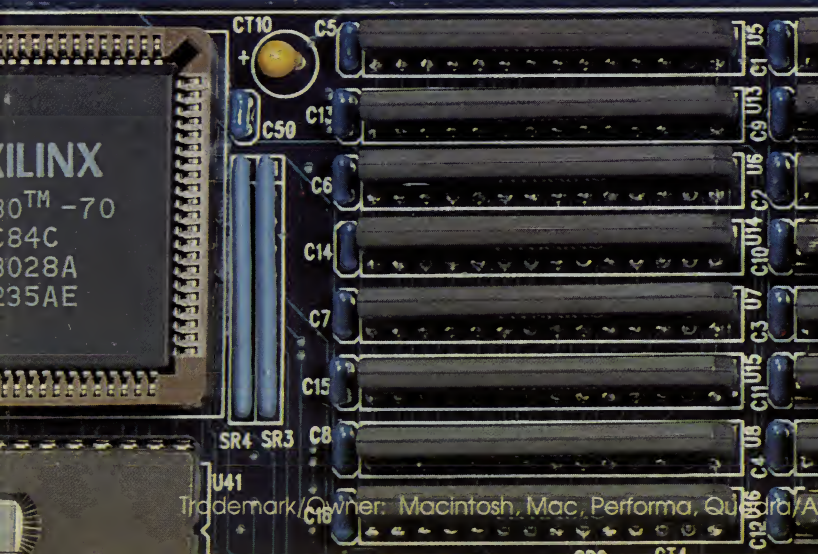


Lapis Technologies, Inc.  
1100 Marina Village Parkway  
Alameda, California 94501  
(510) 748-1600 • FAX (510) 748-1645

8-bit  
(256 colors)  
16-bit  
(32,768 colors)  
24-bit  
(16,777,216 colors)

LC & LC II	◆	◆	◆
SE/30	◆	◆	◆
Performa 400	◆	◆	◆
Performa 600	◆	◆	◆
Mac II/Quadra	◆	◆	◆

ProColorServer display cards are available in 8-bit, 8•16-bit, and 8•16•24-bit versions, and support monitors from 13" to 21", with resolutions ranging from 640 x 480 to 1152 x 872. Lapis also offers a full line of DisplayServer™ and PowerBase™ monochrome display adapters for all Mac systems ranging from the Plus to the Quadra.





## Case Study

# Colossal Graphics has the big picture

By Cliff Lehman

**T**hink big, really big. Ron Jones, president and CEO of Colossal Graphics Inc., does. He wants the world to know that large-format, color PostScript printing is effective and available.

To prove it, last year he ran the machines at his service bureau for 10 days to produce enough 42-inch-by-25-foot individual sections, or tiles, to piece together the world's largest PostScript generated poster — a 300-by-150-foot monster that was to be installed on the field before Super Bowl XXVI in Minnesota.

**Giant-size output.** Jones founded Colossal in 1986 as a large-format service shop where local clients could print out full-color posters, signs and displays up to 44 inches by 25 feet. Larger images can be put together by printing and assembling tiled sections.

Jones, who describes himself as a large-format “evangelist,” said, “Right now people receive

lots of messages, and it's human nature to gravitate toward the biggest, so if you get a large poster rolled up in a tube, that's what you'll open first.”

— Ron Jones

His clients include lawyers who want

color displays for trial presentations, architects, graphics companies, retail outlets that want to tailor point-of-sale displays for regional markets, and companies that need signs for internal use and as displays for trade shows.

Colossal charges about \$10 per square foot for printing on electrostatic machines and \$15 per square foot for projects produced on the NovaJet printer from InCad Corp.

**Colossal products.** The software Jones developed to bring together Macs, PostScript-clone interpreters and large electrostatic plotters is now sold to other shops around the country. Colossal's poster printing products are as varied as software-only and full turnkey systems, including:

► PS Nova for the Mac, a \$2,995 package that includes a software PostScript-clone interpreter and a Chooser-level printer driver that can be used with a customer's NovaJet.

► PS Nova Printing System, a \$15,000 system that includes a NovaJet printer as well as the software PostScript-clone interpreter and driver software. The NovaJet accommodates 36-inch-wide rolls of paper and has 300 dpi, CMYK (cyan, magenta, yellow, black) or monochrome output.

► Colossal PowerScript Digital Color Printing System for the NovaJet is a turnkey system priced at \$40,000. It includes a dedicated PC RIP (raster image processor) for the PostScript interpreter along with the NovaJet inkjet print-



Chuck Robinson, general manager at Colossal Graphics, oversees the output of one of the company's smaller poster jobs.

JAMIE TANAKA

er. The system offers either AppleTalk or EtherTalk connections, and the PC also serves as a print server with production software for previewing, replicating and tiling.

► Colossal PowerScript Digital Color Printing System for Electrostatic Plotters is a \$28,000 to \$96,000 turnkey system for the three 8900 series plotters from XES Inc.

Jones said that most of the businesses buying Colossal's products are reprographic or blueprint shops because they are accustomed to providing the space necessary to handle large-format output and already have expertise with electrostatic plotters.

**A big market.** “Posters are a big thing, but a lot of our business is doing master plans for presentations for architects,” said Bob Wheeler, graphics manager for National Reprographics Inc., a New York service

bureau that uses Colossal's Colossal PowerScript Digital Color Printing System.

“[Large-size prints] used to cost [architects] up to \$5,000 to do a rendering of a building,” he said. “Now they can get it for a fraction of that cost.”

“Large-format PostScript output is a boom market,” Jones said. “A service bureau can make \$30,000 to \$70,000 per month on a \$100,000 investment in equipment.” This is definitely a popular feature with managers at service bureaus, who have to keep the bottom line in sight any time they incorporate new technology.

“It's a profitable venture,” said Robert Burns Jr., a sales representative at BPS Reprographic Services Inc. of San Francisco, which uses Colossal products. “It took less than a year to get back our investment, and we continually upgrade.” □

## Poster printing software lets you think big

By Clay Andres

**C**reating posters, banners or 30-foot-long graphs is problematic when working with printers that use regular and letter-size paper, as most software is woefully inadequate for truly large-scale print jobs.

However, two programs specifically address this oversize issue: BannerMania from Broderbund Software Inc. at the low-end and PosterWorks from S.H. Pierce & Co. at the high end.

Both programs solve the too-small-printer problem by allowing you to tile your job into a mosaic of several pages. Except for this one feature, the two programs are very different.

**Simple banners.** BannerMania is essentially a text-manipulation program with special features to print sections of the banner as tiles. The program cannot import or create graphics. While the program includes a set of special, decorative characters and its own display fonts, BannerMania can import Adobe Type 1 fonts, and it will display and print in color.

When the National Plastics Center and Museum opened almost a year ago in Leomin-

ster, Mass., it made all its signs using Microsoft Word and a LaserWriter. “We saw BannerMania and thought we could make some really neat signs and banners with it,” said Nancy O’Keefe, the museum’s administrative assistant.

O’Keefe said she finds BannerMania especially useful for special events and gatherings as those signs are “not only bigger but more professional-looking.”

**A PostScript workhorse.** PosterWorks is a layout and tiling program with a variety of tools for handling imported graphics and PostScript files and creating color separations. The program also includes a list of PosterWorks-equipped service bureaus.

PosterWorks comes in both individual and service-bureau versions. This makes it possible for you to create your own tiled images and print them on large-format electrostatic and inkjet printers available at some service bureaus.

“Someone will bring us an EPS file and say, ‘Make it 8 by 10 feet,’” said Paul Smith, who runs the computer graphics department at

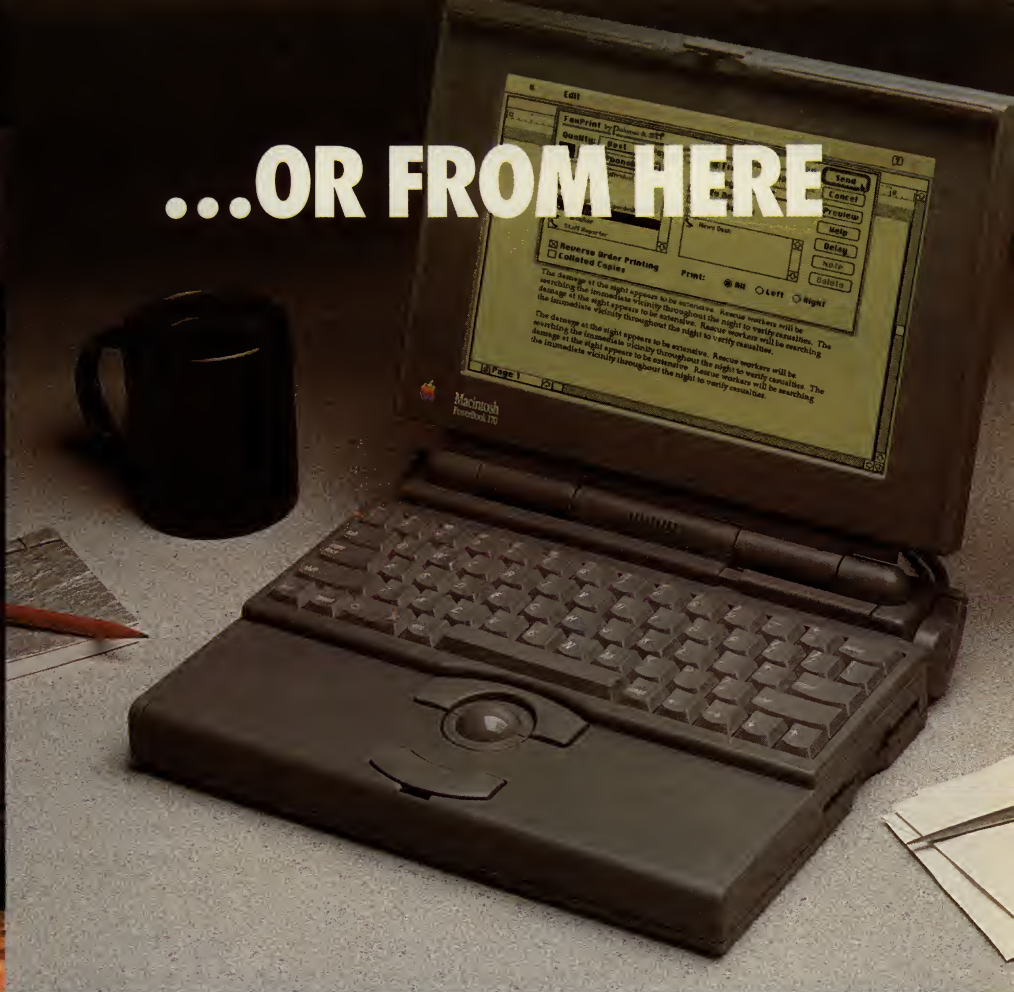
See Poster, Page 50



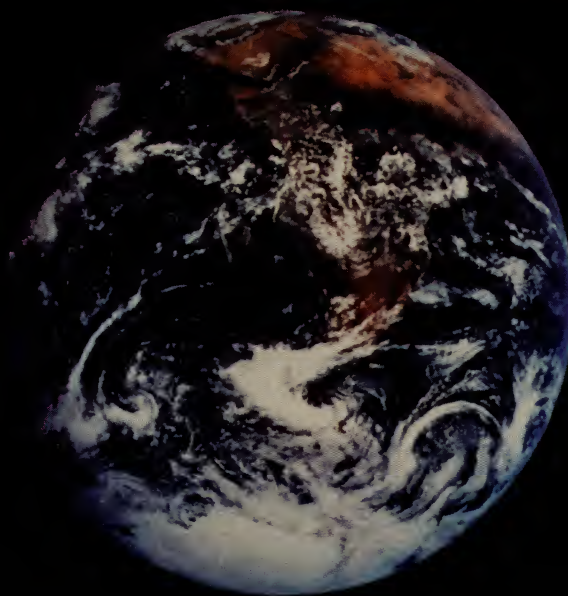
# FAX FROM HERE



# ...OR FROM HERE



# TO ANYWHERE HERE



## WE'LL GIVE YOU THE WORLD AND \$50 BACK

### \$50 REBATE\*

On most PSI fax/data modems through April 30, 1993. Purchase your PSI fax/data modem from your preferred reseller, attach this coupon with proof of purchase and your name, company, address, phone and fax and send it to: PSI Integration Rebate, 851 E. Hamilton Ave., Suite 200 Campbell, CA 95008. Your Purchase must be made before 4/30/93. Limit one rebate per purchase. Valid for US and Canadian customers only.

☐ I am a MacWeek subscriber

\*Offer not valid on COMstation I and II or PowerModem I and II.

Just click your mouse. It's really that simple. Then you'll see how a PSI fax/data modem can dramatically increase your productivity. PSI brings you a full range of fax/data modems for the Mac, with the latest standards in data compression and error correction. Choose from PSI's COMstation line of desktop models, including ultra-high speed and networkable modems, or the internally-mounted PowerModem family that puts the power of a fax right in your PowerBook. Keep in touch and keep it simple. **Call 1-800-622-1722.**

Desktop Products	PowerBook Products	Data	Fax	Retail Price
COMstation ONE	PowerModem	2400	9600	\$195
COMstation TWO	PowerModem II	2400	9600	\$295
COMstation THREE	—	14.4	N/A	\$445
COMstation FOUR	PowerModem III	9600	9600	\$445/\$395
COMstation FIVE	PowerModem IV	14.4	14.4	\$545/\$495
COMstation Network	—	2400	9600	\$395

**PSI FAX/DATA MODEMS. WE GIVE YOU THE WORLD.™**



**INCLUDES OCR TECHNOLOGY FROM CAERE™ THE MAKERS OF OMNIPAGE™.**



# In search of the PostScript clones

By Clay Andres

**A**dobe Systems Inc. has retained its substantial PostScript market lead and plans to increase this by moving forward with PostScript Level 2. Meanwhile, the leading PostScript clone vendor in both the Mac and IBM PC and compatible worlds, Phoenix Technologies Ltd., is also healthy and growing but, according to analysts, not about to overtake Adobe in market share.

Overall, the fates of other PostScript clone developers have been uneven. Tektronix Inc. has given up development of its own PostScript interpreter in favor of Adobe's.

Microsoft Corp.'s TrueImage clone has signed up many vendors but isn't a dominant force. While TrueImage still holds promise for mixed Mac/PC sites as the native printing language for TrueType, Microsoft has made no effort to keep up with Adobe by developing a Level 2 interpreter.

**Overcoming user fears.** "Some end users believe that Adobe PostScript is the only viable product," said Bryan Corrigan, senior industry analyst with BIS Strategic Decisions Inc., a Norwell, Mass.-based market-analysis company. "Three to five years ago there was a legitimate argument that it was very difficult to develop a clone, but that's not the case today," Corrigan said. The current clones are as good and in some cases superior to regular PostScript printers in terms of reliability and performance, according to Corrigan.

**Finding niches.** Phoenix and other clone makers, such as NewGen Systems Corp., have carved out significant market segments and continue to license new customers.

GCC Technologies Inc., a longtime Adobe customer, is instead using PhoenixPage in two new printers.

"We decided to use PhoenixPage because of the reduced time to get the printers to market and the ability to customize the code to add features," said Jim Herrmann,

GCC color-printer product manager.

Condux Inc., a consulting company in Newark, Del., prints a diverse assortment of materials, including the 2,300 mailing envelopes for its annual promotional pamphlet. But when it switched to a larger format, Condux needed a printer that could handle 10-by-13-inch envelopes.

While the company tried a couple of different large-format printers, the envelopes jammed in the circuitous paper paths of its Canon-based engines. Condux tried a GCC SelectPress 600, a tabloid-size 600-dpi printer.

"Running anything through [the SelectPress 600] was a piece of cake, and the resolution is very impressive," said Pete Pepper, Condux president. "We've run all manner of things through here, and I haven't seen any problems."

**Not waiting for Adobe.** Not content to wait, NewGen has found its niche supplying the high-end market with high-resolution printers. "When you control the code, you control your future," said Scott McLure, NewGen product manager. "We don't have to wait for Adobe when there's code that needs fixing."

McLure said there are other niches that can't wait for Adobe. "No one has yet implemented an Adobe PostScript version of the Canon color BubbleJet engine," he said, referring to the engine in Apple's first color printer. To fill this gap, Lexmark International Inc., another former all-Adobe licensee, has co-developed a PostScript interpreter for its bubblejet, the IBM Color Jetprinter PS 4079, with Phoenix, which uses the Canon Bubble Jet print engine.

According to Lexmark, creating a custom PostScript interpreter allowed the company to use a new, fast processor from Advanced Micro Devices Inc.; cut the required RAM in half; and develop ColorGrade technology, a set of proprietary algorithms that Lexmark claims produces better overall color than comparable inkjet printers. And then there's price: Using a PostScript interpreter helped Lexmark produce a printer with a list price \$1,000 less than its closest competitor, the HP PaintJet.

"I'd been watching the Bubble Jet and this was the first version that could work with PostScript," said Dean Spahr of The Artists Studio Inc., a graphic design group in Pittsburgh.

The ColorJet allows Spahr to print on any white or colored paper with a quality that he said is close to the final offset prints.

**Healthy competition.** According to BIS' Corrigan, the competition that clones provide Adobe has pushed Adobe to build better products, in performance and features.

While the clone manufacturers have yet to gain any lead in the competition against PostScript-based printers, new developments in printer engines, faster processors and printing features in PostScript clones will continue to give PostScript printers competition for some time to come. □

## Poster

From Page 48

Oregon Blueprint Co. of Portland, Ore. Using PosterWorks, Smith's department creates the layout and then places and scales the image.

Nike Inc., the Portland-based shoe manufacturer, prints many of its store displays at Oregon Blueprint. The most recent job required the layout of two 35mm transparencies and a background map that were scanned on a high-end scanner and assembled in Adobe Photoshop.

"Even on our Quadra 950, Photoshop gets fairly slow and cumbersome, and it doesn't do tiling," Smith said. The final 10-by-4-foot poster was printed using PosterWorks and attached to Plexiglas to hang as a 3-D banner in Portland's Nike Town Store.

To demonstrate the capabilities of Mitsubishi's dye-sublimation printer at a trade show, Peter Farago, president of Farago Advertising in New York, created a large tiled poster of the printer's actual output. But first he bought a copy of PosterWorks. "It was very successful," Farago said. "Without PosterWorks, we would have suffered through tiling the thing through QuarkXPress. But more likely we wouldn't have done it at all." □

## Product Info

### APPLE

**LaserWriter Pro 600:** \$2,099; **LaserWriter Pro 630:** \$2,529; **LaserWriter Select 300:** \$819; **LaserWriter Select 310:** \$1,079  
20525 Mariani Ave., Cupertino, Calif. 95014  
Phone (408) 996-1010 or (800) 776-2333

### BDT PRODUCTS INC.

**Ergofeed multibin sheet feeders:** \$1,695 to \$3,595, depending on number of bins used  
17152 Armstrong Ave., Irvine, Calif. 92714  
Phone (714) 660-1386 or (800) 346-3238;  
fax (714) 474-0480

### BRODERBUND SOFTWARE INC.

**BannerMania:** \$34.95  
500 Redwood Blvd., Novato, Calif. 94948-6121  
Phone (415) 382-4400 or (800) 932-1212;  
fax (415) 382-4582

### CALCOMP INC.

**CalComp ColorMaster Plus 6603 PS:** \$3,995 (letter-size); **CCL-600:** \$3,995; **ColorMaster Plus 6613 PS:** \$6,995 (tabloid)  
2411 W. La Palma Ave., Anaheim, Calif. 92801  
Phone (714) 821-2000 or (800) 932-1212;  
fax (714) 821-2832

### COLOSSAL GRAPHICS INC.

**PS Nova for the Mac:** \$2,995; **PS Nova Printing System:** \$15,000; **Colossal PowerScript Digital Color Printing System (NovaJet version):** \$40,000; **Colossal PowerScript Digital Color Printing System (Electrostatic plotter version):** \$28,000  
437 Emerson St., Palo Alto, Calif. 94301  
Phone (415) 328-2264; fax (415) 328-1513

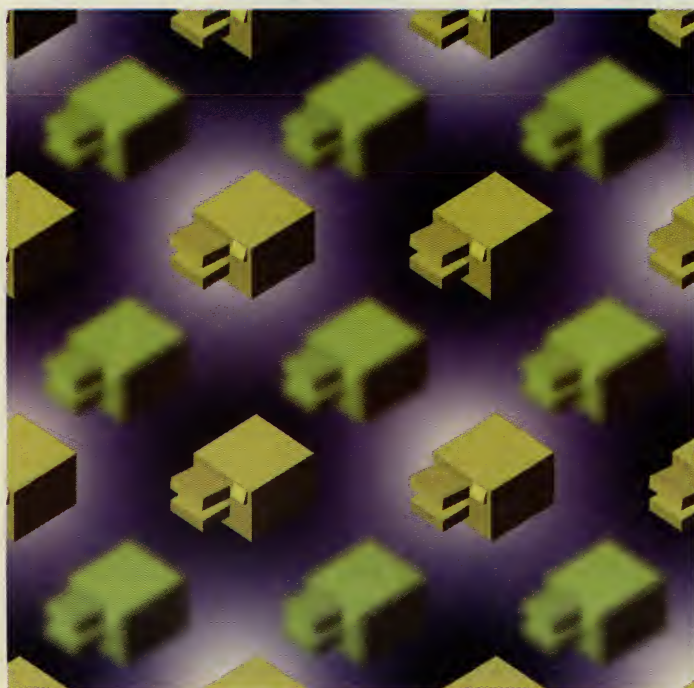
### DATAPRODUCTS CORP.

**LZR 965:** \$2,445  
6219 De Soto Ave., Woodland Hills, Calif. 91365  
Phone (818) 887-8000 or (800) 334-3174;  
fax (818) 887-3816

### DIGITAL EQUIPMENT CORP.

**DEClaser 1152:** \$999 (after a manufacturer's rebate)

See Product Info, Page 52



GARY JAEGER



# The Catalog Is Free. (Our Product Prices Are Slightly Higher.)



## ETHERNET

**\$99<sup>99</sup>**

**EtherLAN LC or NuBus**  
Choose from 26 EtherLAN solutions for any Mac and PowerBook. Find them all in our catalog.

## LOCALTALK

**\$14<sup>99</sup>**

### TurboNet Connectors

Even greater savings with a 10 pack at \$119.99, or a 50 pack at \$499.99. See our 16 port TurboStar Hub at \$474.99.

## HIGH-END COLOR SCANNERS

**\$899<sup>99</sup>**

**FocusScan 600C** Available with or without Adobe PhotoShop® Bundle. Ask about our 800 and 1200 dpi scanners in our catalog.



## We Manufacture & Sell Direct To You.

Why should you pay extra for retailing, distribution and sales clerks? Eliminate the middleman — Buy direct from the manufacturer and save 40%-70% every day!



## We Have More New Products!

- Color Scanners with 600, 800 or 1200 dpi
- A Complete Line of PowerBook Accessories
- Focus Ethernet Transceivers
- Accelerators for SE, Classic, LC and NuBus

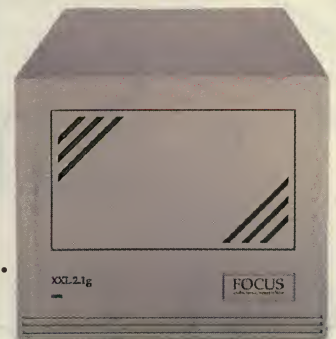
## SYQUEST 44MB

**\$399<sup>99</sup>**



**44MB Removable Drive** Includes a pre-formatted cartridge with over \$400 worth of free utility software. Choose from 18 models of 44MB, 88MB, or the new 88C drives. Ask about the hot new 105MB 3.5" SyQuest removable.

## STORAGE



**\$2749**

### XXL 2.1 Gigabyte

Free software utilities worth \$400. 5400 RPM — the fastest access and retrieval times in the industry. Five-year Micropolis warranty. Focus 1 gigabyte drives are only \$1399.

## TELECOMMUNICATIONS

**\$299<sup>99</sup>**

### 14.4 Fax Data Modem with Software

Find out about our 24/96 fax modems at \$99.99. Also see our two PowerBook versions for the same prices.



## Outstanding Service

- Toll-Free Sales & Technical Support 7 Days A Week
- 30 Day Money Back Guarantee
- Sales Personnel Who Know The Products

To Get Your Free Catalog  
Call Toll-Free 800-538-8866

**FOCUS**  
enhancements



How to Order: Our customer advisors will help you Monday thru Friday 7am to 8pm, Saturday and Sunday 11am to 5pm EST. We accept Visa, Master Card, American Express, Discover, Cashiers Checks, and Money Orders. Focus Enhancements, Inc. 800 West Cummings Park, Woburn, MA. 01801 (617) 938-8088 fax 938-7741  
©1993 Focus Enhancements, Inc. All rights reserved. EtherLAN LC, Focus XXL Drives, TurboNet, FocusScan are registered trademarks of Focus Enhancements, Inc. All prices and items are subject to change and availability. All product names are trademarks of their respective holders.



## Product Info

*From Page 50*

146 Main St., Maynard, Mass. 01754  
 Phone (508) 493-5111 or (800) 344-4825;  
 fax (508) 493-8780

EASTMAN KODAK CO.  
 PRINTER PRODUCTS DIVISION

**Diconix 180si:** \$329; **Diconix 701 (with Kodak MPower 701 Interface Kit):** \$558  
 901 Elm Grove Road, Rochester, N.Y. 14653-6305

Phone (800) 344-0006; fax (716) 726-3108

GCC TECHNOLOGIES INC.

**SelectPress 600:** \$4,499; **WriteMove II:** \$599  
 209 Burlington Road, Bedford, Mass. 01730-9143  
 Phone (617) 275-5800 or (800) 422-7777;  
 fax (617) 275-1115

GENESIS TECHNOLOGY

**JetTray 1500:** \$495  
 3860 Bay Center Place, Hayward, Calif. 94545

Phone (510) 782-4800 or (800) 538-8729;  
 fax (510) 782-4842

GRADCO (USA) INC.

**HCF-1000:** \$495  
 7 Morgan, Irvine, Calif. 92718  
 Phone (714) 770-1223; fax (714) 768-6939

HEWLETT-PACKARD CO.

**LaserJet 4M:** \$2,399; **PaintJet XL300:** \$2,795, or  
 \$3,995 with PostScript Level 2; **PaintJet:** \$885;

**DeskWriter 550C:** \$879; **DeskWriter C:** \$619;  
**DeskJet 550C:** \$879; **DeskJet 500C:** \$619  
 19310 Pruneridge Ave., Cupertino, Calif. 95014  
 Phone (800) 752-0900

LASERMASTER CORP.

**Unity 1200XL:** \$9,995; **1200XL:** \$6,995  
 7156 Shady Oak Road, Eden Prairie, Minn. 55344  
 Phone (612) 944-9330 or (800) 950-6868;  
 fax (612) 944-0522

LEXMARK INTERNATIONAL INC.

**IBM LaserPrinter 4029 10A:** \$2,499; **IBM Color Jetprinter PS 4079:** \$3,199  
 740 New Circle Road N.W., Lexington, Ky. 40511  
 Phone (606) 232-2000 or (800) 358-5835;  
 fax (606) 232-2380

MANNESMANN TALLY CORP.

**MobileWriterPS:** \$999  
 8301 S. 180th St., P.O. Box 97018, Kent, Wash. 98064-9718  
 Phone (206) 251-5524 or (800) 843-1347;  
 fax (206) 251-5520

NEWGEN SYSTEMS CORP.

**TurboPS/660 B:** \$4,995; **TurboPS/1200 B:** \$5,995  
 17580 Newhope St., Fountain Valley, Calif. 92708  
 Phone (714) 641-8600 or (800) 756-0556;  
 fax (714) 641-2800

PRINTWARE

**Professional-II:** \$7,990  
 1270 Eagan Industrial Road, St. Paul, Minn. 55121  
 Phone (612) 456-1400 or (800) 456-1400;  
 fax (612) 454-3684

QMS INC.

**860 Print System:** \$4,595; **QMS ColorScript Model 210:** \$4,995; **Model 230:** \$7,995  
 1 Magnum Pass, Mobile, Ala. 36618  
 Phone (205) 633-4300 or (800) 631-2692;  
 fax (205) 633-0116

S.H. PIERCE & CO.

**PosterWorks:** \$395  
 Suite 323, Building 600, 1 Kendal Square, Cambridge, Mass. 02139  
 Phone (617) 338-2222; fax (617) 338-2223

SONNET TECHNOLOGIES INC.

**FontCard NTX:** \$199  
 18004 Sky Park Circle, Suite 260, Irvine, Calif. 92714  
 Phone (714) 261-2800 or (800) 945-3668;  
 fax (714) 261-2461

TEKTRONIX INC.

GRAPHICS PRINTING AND IMAGING DIVISION  
**ColorQuick Ink-jet Printer:** \$2,495; **Phaser III PXi:** \$9,995; **Phaser 200e:** \$3,695; **Phaser 200i:** \$5,995  
 P.O. Box 1000, Mail Station 63-583, Wilsonville, Ore. 97070  
 Phone (800) 835-6100; fax (503) 682-2980

TEXAS INSTRUMENTS INC.

INFORMATION TECHNOLOGY GROUP  
**MicroWriter 17:** \$999  
 P.O. Box 202230, ITG-036, Austin, Texas 78720-2230  
 Phone (800) 527-3500; fax (512) 345-9509

XANTE CORP.

**Accel-a-Writer 8100:** \$3,995  
 2559 Emogene St., Mobile, Ala. 36606  
 Phone (205) 476-8189 or (800) 926-8839;  
 fax (205) 476-9421

# Show them you mean business.

## MacFlow 3.7 Flowchart Design and Development

Lay it all out for them—the process, the procedures, the relationships. Business works best when everything is clear, and there is no better way to make things clear than a detailed flowchart.

The best way to create flowcharts is MacFlow—the highest-rated flowcharting program. Neither drawing programs nor pencil and paper can create flowcharts as easily as MacFlow. And no program is simpler to learn or use. Graphically organize complex processes, projects, and structures—minutes after opening the package.

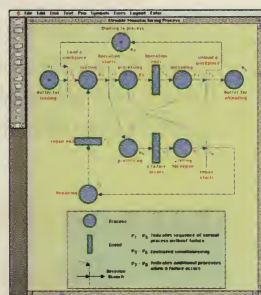
Simply drag pre-drawn symbols onto a page and connect with curved or straight lines. Place text in symbols and on lines, as well as in freestanding notes. Change the chart as desired; lines stretch and stay attached to symbols. Even create stand-alone flowcharts that can be freely distributed to any Macintosh user (and any Windows user with an optional viewer). MacFlow is also System 7-savvy, letting you publish your charts and subscribe to text. Translate to and from text in ASCII and RTF formats as well as outlines created in Acta 7 and MORE.

MacFlow actually enhances your thought process because the interface is so simple and intuitive, nothing stands between your ideas and a presentation-quality flowchart. In fact, you'll find just creating flowcharts keeps your thoughts organized and helps you get a handle on any task.

Show them you're serious—get MacFlow today.



MacUser Magazine July '91



## MacSchedule 3.0 Project Planning and Tracking

Lay it all out for them—the plan, the people, the cost. Give them a path to follow and a way to track progress. Successful projects need a roadmap, and nothing can beat a simple yet comprehensive project schedule.

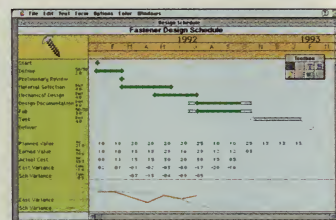
The best way to create quick, presentation-quality project schedules is MacSchedule. The Gantt-chart interface lets you create schedules, with integrated financial data, minutes after you open the application—unlike complex project management software. And MacSchedule is as easy to learn as it is to use.

MacSchedule automatically creates and manages a project calendar. Just enter task names, then indicate timing with a click and drag of the mouse. Status tracking is also easy—just click on a task bar to show progress.

MacSchedule helps track a project from initial estimates to current status by automatically developing calendarized cost estimates and reporting cost and schedule variances in an Earned Value summary. MacSchedule is also System 7-savvy, letting you publish your schedules and data as well as subscribe to data from other programs. Place schedules in documents for proposals and reports or print schedules as slides, overheads, or wallcharts.

With MacSchedule's graphic feedback, you can tell at a glance where your project is and where it's headed. It's the perfect tool for any manager.

Show them your plans for success—get MacSchedule today.



For a free demo disk and catalog,  
 phone, write, or fax Mainstay today.

# Mainstay

\*TRADE UP DETAILS: To qualify, simply print a chart created with Canvas™, CricketDraw™, Design™, DeskDraw™, Diagram Maker™, Dreams™, FlowChart Express™, FlowMaster™, Freehand™, Inspiration™, IntelliDraw™, MacDraw™, MacPaint™, MetaDesign™, MORE™, Org Plus™, OrgChart Express™, SuperPaint™, or TopDown™. Indicate the product used and send the chart to Mainstay along with credit card info or a check for \$99 plus \$10 shipping and handling (CA residents add 8.25% sales tax). Offer expires January 31, 1993 and is valid only in the U.S.

5311-B Derry Avenue, Agoura Hills, CA 91301 (818) 991-6540 (818) 991-4587 fax  
 71 rue des Atrébates, B-1040, Brussels, Belgium 322/733.97.91 322/732.32.46 fax



# Why buy an HP PaintJet XL300, when you can get a lot more color printer for a lot less money.

*Twice as fast as the XL300.*

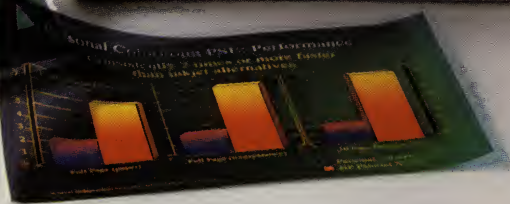
*Cost-per-copy up to six times lower than the XL300.*

*The PSE is smart enough to tell you when it's out of ink. The XL300 isn't.*

*\$2,999 includes PostScript- and HPGL-language compatibility.*

**PURCHASE A PSE TODAY AND GET THE \$400,\* 39 FONT OPTION — FREE!**

*The PSE prints non-smear high-quality transparencies.*



## The Seiko Instruments Personal ColorPoint PSE. Now \$2,999.



Namely, you can get Seiko Instruments' Personal ColorPoint PSE™—with both PostScript™ and HPGL-language compatibility for hundreds of dollars less.

To prove to you how vastly superior the Personal ColorPoint PSE is, we'll send you a color printer comparison kit which includes brochures, actual inkjet and thermal transfer print samples and cost-per-page breakdowns. So you can see for yourself the difference thermal transfer printing can make.

For your free color print comparison kit, call **1-800-888-0817**.

And see just how good this printer looks on paper.

**SII**  
Seiko Instruments



VideoVision™ makes creating and producing high-quality videos incredibly simple. And readily affordable. Now, and for years to come.

Just plug it into your NuBus slot and go from concept to videotape without leaving your desk. It's the quickest, easiest way to input video to your on-screen presentations. And output everything to tape.

Videos with high resolution, flicker-free, true-to-color images and rich, stereo sound. All from a system starting at less than \$2,000.

And VideoVision is more than a superb solution that's sensibly priced. It also gives you room to grow, with an on-board expansion bus for add-ons such as video compression, titling, chroma key and special effects boards. It's the system with a future.

For complete details and the name of your nearest Radius reseller, call us now at 1-800-227-2795 Ext. 4A. Or call 1-800-966-7360 to receive faxed information.

Plug VideoVision into your Macintosh now, for superb video production well into the future.

# Plug Into The Future Of Desktop Video.

VIDEOVISION  
**radius**™



VideoVision gives you added functionality, such as genlock control.

No need to hunt for a place to connect your camcorder. Plug it directly into VideoVision's connector panel for instant "live" recording.

Select your own mix of high-quality input from camcorders and VCRs to laser disk players.



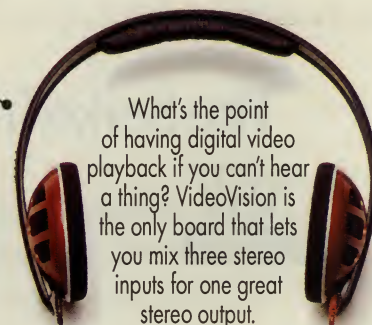
VideoVision is an elegant solution, combining all video and audio plugs in a single compact connector panel.



Only VideoVision's output-to-tape gives you flicker-free images. Watching the competitors' output-to-tape gives you a migraine.

Available now with Adobe Premiere 2.0 and Macromedia Action in a special packaged offer.

You won't need an external encoder. VideoVision instantly transcodes between NTSC, PAL and SECAM.



What's the point of having digital video playback if you can't hear a thing? VideoVision is the only board that lets you mix three stereo inputs for one great stereo output.



VideoVision drives NTSC and 13" monitors in full 24-bit resolution and 2-page monitors in 8-bit color, so you get presentations as colorful as your ideas.

With 100% QuickTime compatibility, VideoVision gives you immediate access to hundreds of QuickTime applications.





# Reviews

- ▶ addDepth. See Page 58.
- ▶ artWorks. See Page 60.
- ▶ On the Road. See Page 61.
- ▶ Reviews Forum. See Page 61.



## Claris focuses on the basics as MacWrite hits the Pro tour

*Long-awaited update to MacWrite II sports a clean and unfettered interface; improved style sheets; and the addition of frames, notes and voice annotation.*

By Ross Scott Rubin

Following a development cycle that suffered more delays than a baseball game in a rain forest, one of the first major word processors to promise complete System 7 support is the last to step up to the plate. The extended gestation of Claris Corp.'s MacWrite Pro was the butt of many jokes, but its recent delivery will finally give MacWrite II users a reason to smile.

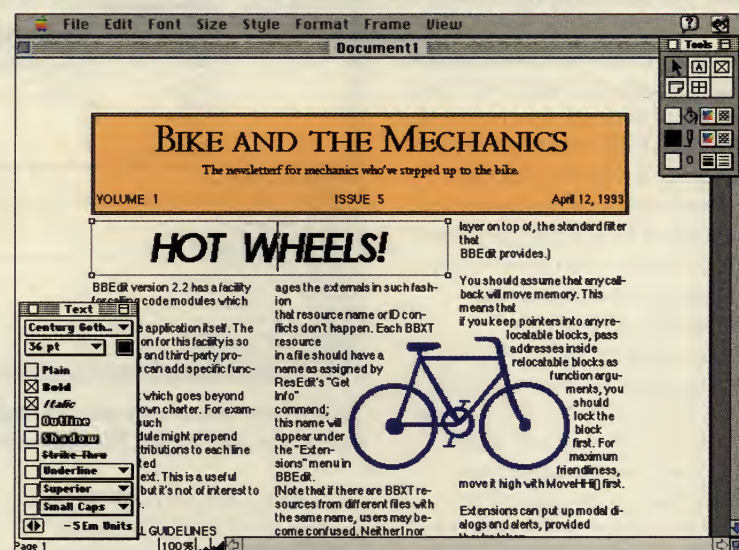
Frames, which can contain text, pictures and tables, are the most dramatic addition to MacWrite Pro, which lists for \$249. Regardless of content, they can be placed anywhere on the page or anchored to text. Picture frames can perform some page-layout software tricks, such as automatically resizing a picture to a frame, and vice versa. You can scale or crop pictures, or make their frames transparent, allowing text to flow around irregularly shaped objects with clipping paths. MacWrite Pro lets you control the text offset around frames in 1-point increments. A palette containing frame-creation tools provides a preset choice of 81 colors and patterns for backgrounds and borders but no gradient fills. Borders can vary in style and thickness.

You can change the background colors, patterns and borders of text frames. However, frames have some frustrating limitations: They cannot contain multiple columns, and they do not allow for vertical justification of text. MacWrite Pro also lacks ClarisWorks' ability to have text flow from one frame to another. Instead, an overflow symbol signals that you must enlarge the frame or delete some text.

MacWrite Pro dramatically illustrates the flexibility of frames in its table facility, arguably the best of any dedicated Mac word processor. You can easily move, resize or sort cells, or merge or split them horizontally or vertically. All this is easily accessible from commands in MacWrite Pro's Table menu, which appears only when a table is selected. The Insert Table command automatically converts selected tab-delimited text to table format.

Electronic Post-it-style notes represent a welcome addition for workgroups. Notes are free-floating missives that annotate documents with a combination of pictures, text or microphone input. Double-clicking a note's title bar or choosing Collapse Note from the Notes menu reduces the note to a small icon. The Notes menu also allows deleting, expanding and collapsing of all document notes but provides no method of searching for them. The omission is especially hampering, given the lack of a bookmark facility.

**Matters of style.** Claris has brought its style support into the modern era, adding paragraph



MacWrite Pro's frames can span columns and include text, graphics, tables, fills and borders. Text can wrap around nonrectangular objects, and display type can be kerned tightly.

styles while retaining character styles. In fact, paragraph styles can exist independent of character formatting. You can apply styles from a submenu, Command-key equivalents or a palette. The style palette, with its miniature menus, effectively applies styles without confusing

style application with style definition. You can also export style information into a new document. While Claris makes defining styles very easy, the Copy Ruler and Apply Ruler commands still work for quick formatting.

See MacWrite, Page 59

### score card

#### MacWrite Pro

Claris Corp.  
Version tested: 1.0  
List price: \$249\*  
Overall value ♦♦♦♦

The long-awaited MacWrite Pro upgrade exploits System 7 and supports anchored and free-floating frames, columns, sections, paragraph styles and voice annotation in a clean interface. Flexible table handling, editable page magnifications and precise kerning make it an ideal choice for users who value ease of use, revision tracking and layout control over advanced and long-document-oriented features. Only time will tell if developers will take advantage of MacWrite's new extensible architecture.

Performance ♦♦♦♦  
Features ♦♦♦♦  
Ease of use ♦♦♦♦♦  
Documentation/support ♦♦♦♦

\* Upgrades from MacWrite II, \$69; foreign-language dictionaries, \$49 each.

### R A T I N G S K E Y

♦♦♦♦♦ Excellent  
♦♦♦♦ Very good  
♦♦♦ Good  
♦♦ Fair  
♦ Unsatisfactory

## Pastel's DayMaker 2.0 right on schedule with new features, improved interface

*Gets To-Do view, recurring events*

By Dale Coleman

Pastel Development Corp.'s DayMaker was one of the first full-featured personal information managers for the Macintosh. Version 2.0 adds many new features, such as recurring events and a To-Do view, and includes some modifications to the interface that make it more intuitive and, therefore, easier to both learn and use on a regular basis.

Some would argue that designing a clean interface is as much an art as a science, particularly for an application as flexible and feature-rich as DayMaker. We suspect that the Item view in the original version was the stumbling block for many users. In Version 2.0, which lists for \$129.95, it has been replaced with the Item window, a much more intuitive arrangement.

Items — the basic building blocks of DayMaker — can be either calendar events or to-do elements. The

key to organizing and categorizing items in DayMaker is the tag, a powerful and quite intuitive feature found in the original version that lets you specify which calendar items are displayed in a specific view. You set most characteristics of each calendar item, such as tags, priorities, alarms, and starting and ending dates and times, in an indi-

vidual Item window. (Type style is set as a document preference.)

Version 2.0 lets you have several Item windows open simultaneously. Because of this, however, it would be extremely helpful if the title bar displayed the item's name rather than the somewhat noncommunicative "Item Window."

See DayMaker, next page

### score card

#### DayMaker

Pastel Development Corp.  
Overall value ♦♦♦♦

Version tested: 2.0

List price: \$129.95\*

Pastel Development has added several new features and improved the user interface to DayMaker with Version 2.0 without significantly changing the overall character of the original Mac calendaring personal information manager. The most significant new features are recurring events and a To-Do view. The old Item view is replaced with a window for each item. This single change greatly enhances DayMaker's accessibility; although it's a powerful tool, you'll still need to spend more time learning than you may be accustomed to with well-designed Mac applications.

Performance ♦♦♦♦  
Features ♦♦♦♦

Ease of use ♦♦♦♦  
Documentation/support ♦♦♦♦

\* Upgrades from DayMaker 1.0, \$29.95 if bought before Aug. 10, 1992; free if purchased after that date.



## DayMaker

From previous page

**Recurring events.** The new recurring events feature is very flexible. The scheduling options of a recurring "day" event include every weekday, every other day, a specific day of the month, every "nth" day, the day of the week, every other day of the week, the numerical occurrence of a day of the week (for example, every fourth Sunday) and annually. The scheduling options for a "month" event include every month, on a specific month, bimonthly and quarterly.

This feature relies extensively on pop-up menus for setup and is, thus, fairly easy to use. If you change a characteristic of an individual occurrence in a recurring event, a dialog box appears, asking if you want the changes to affect just the single item, all related occurrences, all later occurrences or all earlier occurrences.

The recurring events feature probably offers more options than anything else on the street. It can also be terribly confusing, and under some conditions, it can cause erratic screen display and refresh problems. But as with most aspects of DayMaker 2.0's interface, you can tame the confusion with a bit of study and experimentation.

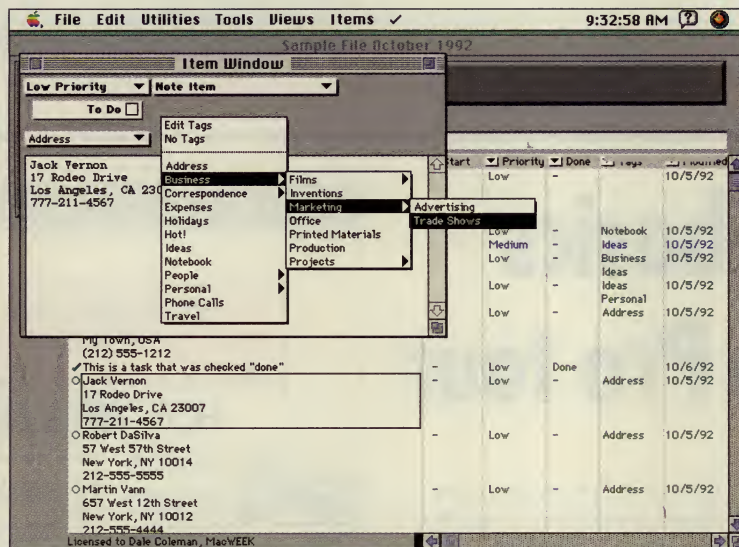
Another new feature, the To-Do view, greatly enhances DayMaker

DayMaker 2.0 is undeniably among the most feature-packed products in the category.

**Other changes.** A variety of other features are either new or enhanced. Printing enhancements include a Print Preview, selective printing of headers and footers, optional printing of start and finish times, and printing to most popular printed organizer formats.

2.0's utility, compared with the original version's. The To-Do view is split horizontally, with "done" items in the lower portion of the window and "not done" items in the upper part. You can change a to-do's status by dragging between the two portions of the window.

The new Item window helps make the DayMaker 2.0 interface much more accessible than in the original version. This window is used to set item characteristics.



You can print a single item by issuing the print command when an Item window is in the foreground.

Printing fonts can now be different from screen fonts, and changing printers is easier than before. You can now change all item characteristics with commands found on the Tools menu. In addition, you can reorder the custom View, Sort and Create Items menus as needed. And Version 2.0 lets you "batch-change" several items at one time or change the status of items from note to calendar.

Pastel is claiming an overall speed increase with Version 2.0, although the program seems relatively sluggish on LC-class or slower Macs. Overall, however, we found that performance improved over Version 1.0. Loading times are reduced because the new version is disk-based rather than RAM-based. In addition to speedier start-up, this scheme lets you run



In the To-Do view you can see all to-dos, as shown here, or any logical subset of them. After you complete an item, you drag it to the lower portion of the window.

DayMaker in a smaller partition. The penalty, of course, is that performance suffers whenever DayMaker has to swap portions of the calendar to and from the disk.

Other changes fall into the category of "things that shouldn't have needed fixing in the first place." These include scrolling in the Item window view, support for pulse dialing and user-definable defaults for alarms.

#### Documentation and support.

The 90-page documentation is basically a hit-or-miss affair: serviceable but reflecting somewhat the less than 100 percent clear thinking shown in the design of the program itself. The index is anemic. For example, the Print Preview feature, which is part of Portfolio Software Inc.'s Dyno-Page Lite, is very useful, but there's no mention of it in the index.

On the other hand, the balloon help system is better than most. Technical support is a toll call to New York during Eastern business hours and is also available via most mainstream commercial electronic services. In our experience, Pastel's responsiveness is good.

**Conclusions.** DayMaker 2.0 is undeniably among the most feature-packed products in the category. It may lack a feature you might appreciate, such as import and export support for the Sharp Wizard organizer, but as a stand-alone product it can go head to head with the major competition, including Now Software Inc.'s Now Up-to-Date.

The new features, especially the To-Do view and recurring events, and the enhancements both to other features and the interface, make this a compelling upgrade for those who use and appreciate the original version. Future complementary products (see story, left), especially network support, will greatly enhance the product. Our reservations about the interface are, in the final analysis, tentative. DayMaker will work for you, but you have to be prepared to put some effort into learning and using the product.

Current DayMaker users can upgrade to 2.0 for \$29.95. Those who bought the program after Aug. 10, 1992, can upgrade free.

Pastel Development Corp. is at 113 Spring St., New York, N.Y. 10012. Phone (212) 941-7500 or (800) 727-6732; fax (212) 431-3079. □

## Enhancements will brighten DayMaker's future

Pastel Development Corp. has announced a variety of as-yet-unreleased enhancements for DayMaker. These include a network version called DayMaker for Workgroups, an address-book extension and DayMaker OAK (Object-oriented Application Kernel). The arrival of these products, now expected by midsummer, should significantly enhance DayMaker's usefulness.

The network version will give DayMaker many of the features currently available in Now Software Inc.'s Now Up-to-Date 2.0 (see MacWEEK, March 29), in addition to several features that will be unique to DayMaker. The network features that Pastel said should bring DayMaker up to par with Now Up-to-Date 2.0 include shared events on public calendars and the ability to automatically reconcile changes made to the local calendar off-line when you reconnect to the network. This update feature is specifically designed for mobile PowerBook users. A new view, called Multi-day, will display events in a time-grid format.

DayMaker for Workgroups, according to Pastel, will also include scheduling features similar to those currently available in ON Technology Inc.'s Meeting Maker. Now Up-to-Date 2.0 has no automatic meeting-scheduling features. The network version

will also include multiple levels of access privileges, a feature also lacking in Now Up-to-Date 2.0.

This year, the major personal information manager (PIM) purveyors are planning to introduce products that will link scheduling with contact management. Pastel's offering will be called the DayMaker Address Book Extension. In addition to standard features, including searching and telephone dialing, this product will use the DayMaker tag system to help organize and categorize contact information. After Hours Software Inc. currently offers a similar link between DateBook and InTouch using Apple events. One of the more interesting features of the Address Book Extension, as described by Pastel, is the ability to select an entry in the address book and have all related calendar items highlighted.

Third parties and motivated individuals will be able to extend DayMaker's capabilities in a variety of ways with DayMaker OAK, which will be included with DayMaker 2.1. According to Pastel, DayMaker OAK extensions will be drop-in modules. If all goes according to plan, OAK extensions will propel DayMaker into position as the most flexible, configurable PIM product available. The company lists several areas that are candidates for the OAK treatment, including:

- ▶ Automation of such tasks as entry and searching.
- ▶ File import and export to handheld electronic organizers (Now Up-to-Date already has an excellent import-export link to the Sharp Wizard line).
- ▶ File import and export to personal digital assistants, including Apple's.
- ▶ Network environment calendaring and scheduling enhancements.
- ▶ Calendar and information publishing.
- ▶ Contact tracking and time and billing management.
- ▶ Specialized time management and resource scheduling.
- ▶ Additional data views.

Apparently, our PIM software tools will be keeping pace with new advances in the hardware. Soon, anyone so inclined will be able to acquire hardware as suitable for travel as a briefcase or traditional personal organizer. Some would argue that the common PowerBook signifies that the future has already arrived. It makes sense that we use a tightly integrated application to manage contact information, events and appointments, to-do lists, shared calendars and similar information. Pastel plans to ensure that DayMaker meets that requirement. — By Dale Coleman

## SYSTEM 7 COMPATIBILITY

### DayMaker 2.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	No
Apple events	Yes
32-bit addressing*	Yes

\*According to vendor.



"3-in-1"  
DREAM MACHINE!



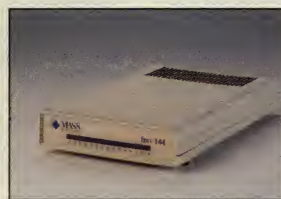
# Try Voice, Data & Fax at 14,400 bps



The powerful MASSfm24/96, an elegant, compact "mini-tower" is ideal for your personal fax needs.



The MASS Network Fax is the most reliable way to serve your entire multiuser network and save money at the same time.



The MASSmv 144 combines the capabilities of an answering machine, fax machine and ultra high-speed data modem in a single device.



MASS PB 24/96 internal fax modem is designed for the PowerBook. Simply install into the modem port, no other power source is required.

## SEND YOUR DATA WITH EASE

Go ahead. Toss that annoying answering machine. Lose that temperamental modem. And just say no to ever waiting in line again to send a fax. At MASS Microsystems, we know you have better things to do with your time. We also know your standards are high. They should be. That's why we design our ultra-high performance, utterly reliable products with our loyal, but discriminating, Mac users in mind. Our *MASSfmv 144* truly goes where no other fax machine has gone before.

You get the most advanced answering machine. One that takes messages and works even when you don't. Powerful software so you can send one fax to many people. Or many faxes to one person. All at 14,400bps! Import names and fax numbers from other

databases. Schedule faxes for when the sun and rates go down. They'll look real good too. High-definition, near-laser quality. And Group 3 compatible so you can talk to fax machines anywhere in the world.

Best of all, fax while you work in your current application. Or transfer data at warp speed. In fact, this 3-in-1 dream machine does just about everything except tie your shoes. There you have it. Truly the total voice/fax/data solution for those who thrive on being at the cutting edge. And those who don't want to fiddle around in fiendishly long fax lines anymore.

Go ahead. Give us a call today at 1-800-522-7979. Let's talk. We're MASS Microsystems, the company that gives you

leading edge technology, uncompromising quality and truly world class support. And don't forget our exclusive Next Day Repair/Exchange. It doesn't get any better than that!



Maybe it's time to lose some of that clutter.



810 West Maude Avenue  
Sunnyvale, CA 94086  
1.800.522-7979  
1.408.522-1200



# addDepth brings dimension to 2-D line art and type

*addDepth is a quick and relatively easy way to add 3-D type and art to print and presentation work.*

By Philip Bishop

With the release of addDepth, Ray Dream Inc. joins Adobe Systems Inc.'s Dimensions in bringing basic 3-D illustration capabilities to 2-D graphic artists. addDepth allows you to quickly and easily do just what the name says: add depth and perspective to 2-D line art and type. At \$179, addDepth is closer to the \$199 Dimensions in price than in features.

**Basic basics.** You can type or draw directly in addDepth and, like Dimensions, you can save your illustration as an editable PostScript draw file (an advantage, since most 3-D programs work with bit-map files, which are difficult to edit). addDepth files can be printed from within the program or exported in Adobe Illustrator, Aldus FreeHand, PICT and Encapsulated PostScript formats. addDepth can import files in Illustrator versions 1.1, 88 and 3.0; FreeHand 3.0; and PICT format.

By comparison, you cannot create type directly in Adobe Dimensions nor can you print files directly from within Dimensions.

Text is created in addDepth with the Text dialog box, which is called up by clicking the Text tool on the Working Plane. The Text dialog allows you to select a typeface, style and size, as well as set scaling, alignment, indentation, baseline shift, leading, word and letter spacing, and kerning. One feature lacking in this otherwise full complement is the capability to preview a change before committing to it. As a work-around, you can make a change, click OK, view the change and then call up the Text dialog again for additional editing. This shortcom-

ing, which is repeated in the Light-source palette, is noteworthy because the program excels at making the transition from 2-D artwork remarkably easy. Overall, we found addDepth much more intuitive to use than Dimensions.

**Easy tools.** addDepth's Virtual Trackball is a modified version of a key component of Ray Dream Designer, the company's full-fledged 3-D modeling and rendering program. Selecting the Virtual Trackball tool places a circle around the selected object and turns the cursor into a curved arrow. With this tool you can rotate the object in 3-D space and quickly view any surface with simple movements of the mouse.

Extrusion and bevel tools, found in addDepth's Geometry palette, are also straightforward to use. With the Extrusion Depth tool you add the third dimension — depth — to the height and width of a 2-D object. You can set the extrusion depth from zero to 1,000 points by either dragging a slider or typing a number. Front and back bevels are adjusted by dragging two handles on a box called the Bevel Diagram.

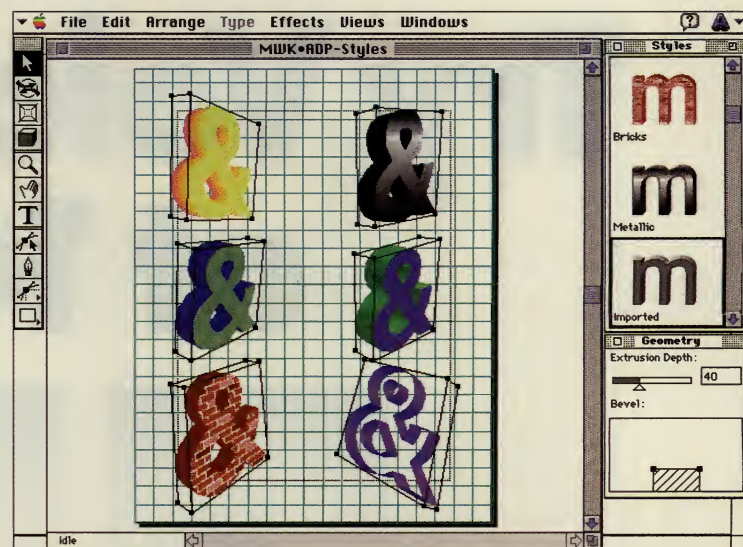
**Adding color.** The Color Style dialog box allows you to apply color shading, stroke, fill and a two-color gradation to an object's faces, bevels and sides. Color Style also allows you to make faces or bevels invisible, which can produce some interesting effects; for example, the program's Tubular style is a shape without front or back faces. A miniature representation of the object you are editing appears in the upper right of the Color Style dialog and can be rotated to view any side. This is a very useful feature. Styles can be saved in and selected from the Style palette, a handy scrolling window that gives a thumbnail representation of each available style.

In the Color Style dialog, you can add a 2-D decal, or "map," to an object. For example, you can put a label on the design of a cereal box. Ray Dream's implementation of this feature is disappointing, however, because the program supports placing artwork only on flat surfaces, which excludes curved objects.

addDepth's neglect of curves extends to its 2-D drawing tools: Primitives (basic 2-D shapes) for



addDepth lets you extrude type and combine it with other extruded PostScript objects. It features sophisticated controls for using type. Once on the page, you can convert fonts to outlines for further manipulation.



In addDepth you can save styles used to adorn text and objects. A few styles, shown here, are provided with the program, and you can easily add your own.

rectangles, ellipses and polygons are provided, but spheres are not. More serious, you cannot lathe objects, which precludes easy creation of swept surfaces such as bottles and bearings.

But despite its lack of round objects (you can extrude round shapes to form cylinders, but bevels are limited to a single 45-degree incline), addDepth has enough tools to create a broad range of 2-D artwork directly in the program. In addition to a 2-D Selection tool, the Pen tool can create corner and curved points that, in turn, can be edited with Bezier controls. Three other tools let you convert corner points to curve points, and vice versa, as well as add and delete points. Objects can be grouped and aligned and even combined as compound paths, thus providing the capability to create objects with 3-D holes. (Dimensions, intended as an adjunct to Adobe Illustrator, offers no 2-D tools.)

addDepth supports both RGB (red, green, blue) and CMYK (cyan, magenta, yellow, black) color models.

Perspective is a key element in the composition of a 3-D object; with it you determine from which point and at what angle to view an object. Ray Dream has devised a simple and visual means to control these important parameters: the Perspective Box, which causes a box with four handles to appear in your document window. As you drag the handles, your perspective of the objects you are working with changes. If you click and drag the box itself, you can change your viewpoint.

**Rendering.** Generally, we found addDepth's performance very fast. This may partly be because the objects we created in the program were small and, thus, rendered relatively quickly. Also,

*See addDepth, next page*

## score card

### addDepth

Ray Dream Inc.

Overall value ♦♦♦♦

Version tested: 1.0.1

List price: \$179

addDepth allows you to add 3-D depth and perspective quickly and easily to 2-D line art and type. You can type or draw directly in the program, as well as save illustrations as editable PostScript draw files. Ray Dream has created an interface that makes addDepth remarkably easy to use. On the downside, addDepth doesn't support spheres or lathed objects, and its artwork mapping function is limited to flat surfaces; for these features, Adobe Dimensions, addDepth's main competitor, is far superior. But particularly for creating 3-D type, and for those who don't have another drawing program, addDepth is a very useful tool.

Performance ♦♦♦♦  
Features ♦♦♦♦

Ease of use ♦♦♦♦  
Documentation/support ♦♦♦♦



## MacWrite

From Page 55

Like its predecessor, MacWrite Pro can find and change text on any formatting attribute. While the complex Find/Change command is less tedious than Microsoft Word's maze of dialog boxes for the same operation, MacWrite Pro lacks Word's ability to search on styles. Mysteriously, the program still cannot undo a Change All operation.

You can specify rules for hyphenation in the Preferences dialog or have the document hyphenate automatically. The limited hyphenation engine, though, sometimes breaks words in undesirable ways. MacWrite Pro lets you set character spacing in 0.01 em-space increments via a dialog box, or you can adjust kerning for selections from the keyboard. Automatic kerning can be enabled through a check box in the Preferences dialog box.

Other worthwhile goodies include exceptionally flexible date stamping, automatic saving and multiple backups. You can edit text in any magnification from 25 percent to 400 percent, any of which can include a side-by-side view of

facing pages. You can divide a document into sections, each with its own title page and columns. Columns, however, cannot use borders.

In addition to the standard date, time and page number, you can insert the section number, revision number and document name into a document. A Document Info command, similar to the one in WordPerfect, tabulates words, paragraphs and characters as it displays the document's revision number, disk size and the time open, but this feature is particularly sluggish.

### Interface and performance.

MacWrite Pro sets a word processing standard for clean and unfettered interface design. Despite the addition of 130 new features, its interface stays out of your way and lets you concentrate on writing. Still, its menu organization could use improvement. We'd like to see MacWrite Pro's various palettes controlled from the View menu. The Thesaurus command should be elevated from its hierarchical position in the Spelling submenu to the main Edit menu.

Spell checking is well-implemented. One nice feature for owners of

Clarisc's optional foreign-language dictionaries is that MacWrite Pro will spell check a document using multiple dictionaries simultaneously.

MacWrite II was the first Mac word processor to let you edit header and footer sizes on the page. To this, MacWrite Pro adds direct manipulation of page guides, columns and cell borders. To readjust margins, for example, you simply Option-drag the page guides to a new location. Inexplicably, while left- and right-cell borders in a table can be freely dragged, page and column guides must be Option-dragged. While text will automatically wrap around frames or object clipping paths, you cannot drag and drop blocks of text as with Microsoft Word.

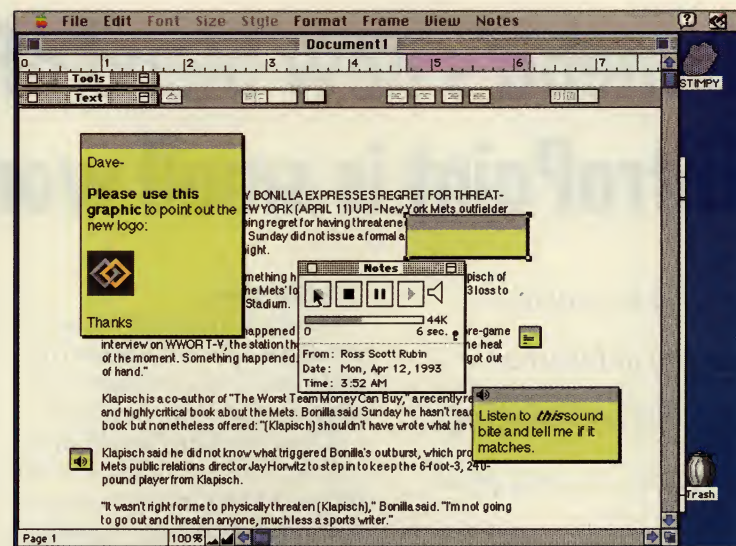
Like other Claris applications, MacWrite Pro relies on floating palettes to provide quick access to commands. Compared with Word's ribbon and tool bar, the palettes are easier to use because they spell out exactly what they're doing while avoiding a trip to the top of the screen. Those with small screens will welcome the ability to quickly reduce palettes to their small title bars that can "dock" to a remote part of the screen. You can close or dock all open palettes by Option-clicking on the close or "gravity zoom" box of one palette and even change the docking location by Option-dragging a palette to a new screen location.

Perhaps because it always displays in a WYSIWYG view, MacWrite Pro's speed is only average for most operations. Users with roomier screens may find docking palettes useful, since having them all on screen slows scrolling speed significantly. Translating documents from other formats and spell checking moved at a quick clip on a Mac IIci.

MacWrite Pro seemed stable in normal use. Importing MacWrite II files caused some system errors, particularly when no printer driver was selected in the Chooser. Claris confirmed the bug and intends to address the problem shortly with a maintenance release. Microsoft Word files imported smoothly, although tables are imported as a single, long column of paragraph-delimited items.

Users of low-end Macs and PowerBooks should appreciate MacWrite Pro's relatively low 1-Mbyte suggested memory partition, which can be set to a minimum of 600 Kbytes. We were able to run the program on a PowerBook 100 with 1 Mbyte of RAM and found the performance surprisingly good.

We also have one complaint about MacWrite Pro's table feature. While its implementation is good, the maximum table size is 100 cells, which seems unnecessarily restrictive, given the feature's power.



MacWrite Pro's electronic annotations resemble their sticky yellow cousins. Notes can be repositioned freely and made into icons. Docked palettes (upper left) stay out of your way.

**What's missing.** One feature of MacWrite Pro that Claris touts is its ADDIt capability, which gives the program a modular architecture akin to Adobe Photoshop or QuarkXPress. Cottage industries creating add-ons have contributed to those programs' power and appeal. Indeed, while the table and note editors demonstrate the potential of ADDIts, Claris' inclusion of only two ADDIts is disappointing.

MacWrite Pro is an inexpensive, focused tool that meets the average person's needs.

MacWrite Pro also lacks some of the smarter features of Microsoft Word, including envelope creation, bullet and paragraph-number generation, and drop caps (mildly surprising in such a layout-oriented word processor). Other missing high-end features include macros, outlining, equation editing and the fashionable — but of dubious value — grammar checking. While the addition of paragraph styles, document statistics and sections has bolstered MacWrite's long-document support, those seeking indexing, cross-referencing or table-of-contents generation will have to look elsewhere.

**Documentation and support.** While MacWrite Pro floats balloon help for all menus, no balloons are provided for check boxes or buttons. A hypertext-based help system common to Claris applications conveys task-based assistance. Both the Getting Started and Users' Guide are exceptionally well-organized and well-

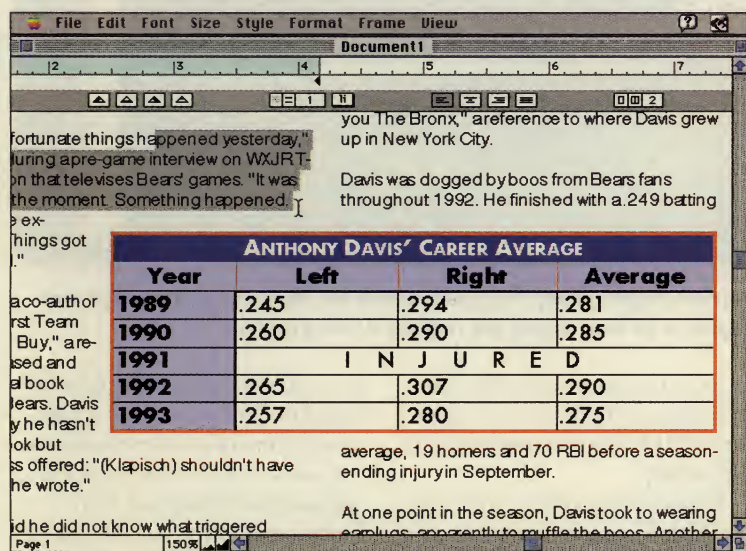
written. Claris provides technical support via toll call, fax, and its own forums on AppleLink, America Online and CompuServe. While support lines are invariably busy, representatives do return calls and on-line support is impressively prompt.

**Conclusions.** In this age of bloated, RAM-eating word processors, MacWrite Pro is an inexpensive, focused tool that meets the average person's needs. What it does, it manages very well in a svelte package. While lacking the raw speed of WordStar International Inc.'s WriteNow, MacWrite Pro's XTND filters and support of publish and subscribe link it to other packages that could help fill the features gap. Frames allow users to create eye-catching documents easily.

Nevertheless, Claris could add more features without sacrificing simplicity. Without taking better advantage of ADDIts, MacWrite Pro's developers will be hard pressed to match upcoming releases of Microsoft Word and WordPerfect. As it stands, MacWrite Pro has a Mac-like interface that's second to none. If Claris can pick up the pace, its users will have the best of both worlds.

Claris offers a modest \$69 upgrade to users of previous versions.

Claris Corp. is at 5201 Patrick Henry Drive, Santa Clara, Calif. 95052. Phone (408) 727-8227; fax (408) 987-3932. □



A MacWrite II carry-over is the capability to edit at different page magnifications. You can zoom in on objects such as MacWrite Pro's new tables.

## addDepth

From previous page

addDepth automatically interrupts screen redraw when you perform another task, so you don't have to wait long as objects are rendered.

**Documentation.** The addDepth documentation, which is very good, includes two tutorials, plus some discussions to help 2-D artists and designers get accustomed to working in 3-D. The documentation neglects to make it clear, however, that if you don't have either TrueType fonts or Adobe Type Manager installed, addDepth won't launch.

**Conclusions.** Users of Adobe Illustrator and those who require

more-sophisticated 3-D objects, particularly lathed or spherical ones, may find Dimensions the better buy than addDepth. For creating 3-D type, and other general uses where extruded art is called for, we prefer addDepth over the Adobe product. You can use type directly in addDepth, it has a simple yet capable selection of 2-D drawing tools, and you can print directly from within the program — all features that Dimensions lacks. In short, addDepth is a quick and relatively easy way to add 3-D type and art to print and presentation work.

Ray Dream Inc. is at 1804 N. Shoreline Blvd., Mountain View, Calif. 94043. Phone (800) 846-0111; fax (415) 960-1198. □

### SYSTEM 7 COMPATIBILITY

#### MacWrite Pro 1.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	Yes
32-bit addressing*	Yes

\*According to vendor.



# Deneba's new blend of Canvas, UltraPaint is small work of art

*artWorks combines the best of Deneba's drawing and painting programs at a low price.*

By Philip Bishop

Deneba Software's artWorks is a drawing and painting program created from the selective union of two of the company's existing products — Canvas and UltraPaint. With an expected street price of less than \$90 (it lists for \$149) artWorks is sure to be attractive to the home, education and small-business market at which it is aimed.

**Spitting image.** Not surprisingly, artWorks bears a strong resemblance to its parents. artWorks' tool bar, for example, has the same design and basically the same components as the tool bar from the lackluster UltraPaint, including pop-up menus for patterns, background and foreground color, line size, magnification, dashes, and line types.

With artWorks, however, these tools have a new and much more powerful environment in which to function. For starters, artWorks is a 24-bit-color program, up from the eight-bit functionality of UltraPaint. (This means full access to the 16.7 million-color paint box found in most painting programs today.) And while UltraPaint requires that you work among three levels — Paint, Draw and Composite — artWorks, mimicking the popular Canvas, combines Paint and Draw operations in a single level, plus it adds a Layers function.

Canvas' presence in artWorks is more than superficial. Although not based on the same core code, artWorks' Draw engine is pure Canvas: It partakes of the latter's open architecture design, which makes considerable use of external plug-in tools in addition to a set of core tools.

artWorks' tools, both core and external, also employ Canvas' familiar "multiplex" icons: A right-facing arrow indicates the presence of a pop-up menu (containing more options), while two arrows pointing down indicate that by double-clicking on the icon, you can call up a dialog box containing a Tool Manager. Tool Managers allow you to customize 22 of artWorks' tools and functions.

Like Canvas, the System 7-savvy artWorks also supports the third-party Acquire and Effects plug-ins for Adobe Photoshop. Acquire plug-ins let you scan artwork directly into the program, for example, while the Effects plug-ins are primarily filters, which allow

such special effects as embossing or sharpening.

As does Aldus Corp.'s SuperPaint (artWorks' main competitor in the low-cost painting and drawing field), artWorks also provides access to Gallery Effects, Aldus' collection of filters that work like Photoshop plug-ins.

You can adjust filter settings in the Filter Manager, but we found this a lot more complicated than it should be in an entry-level program.

Deneba does not recommend using Canvas' external tools with artWorks, although the company said some will work fine. We found only three Canvas tools that artWorks could load and only one, registration marks, that worked.

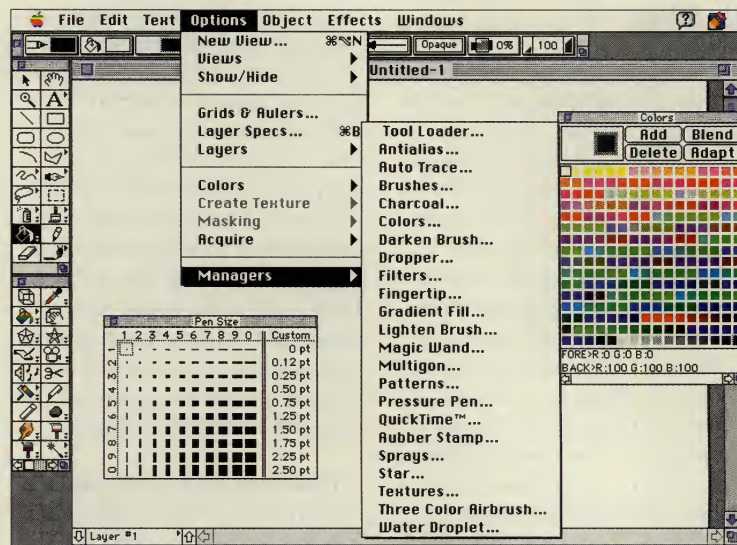
**Tool set.** artWorks' external tools are important because the program's core tool set includes only the most basic Paint or Draw features: Line, Rectangle, Rounded Rectangle, Oval, FreeHand, Paint Brush, Spray Can, Pencil, Pen and Eraser. artWorks does have a useful extended collection of lassos and marquee tools for adding to and subtracting from selections. And it uses Bezier curves in much the same way Canvas does.

But text in artWorks is basic — no kerning or leading and no capability for binding text to a path. artWorks inherits a couple of naturalistic tools from UltraPaint — Quill Pen, Charcoal and Chalk — but if you need these features, Fractal Design Corp.'s Painter or Sketcher are more artful solutions.

artWorks allows you to create and use custom textures. You can also create your own textures in artWorks from paint or draw objects.

**Outsmarted.** artWorks has a virtual-memory function called SmartMemory that automatically draws on available RAM as the memory demands of an illustration grow. We had mixed results testing this feature. Sometimes a file larger than the RAM partition set in the Get Info box opened fine. On other occasions, however, we received out-of-memory messages even though we had plenty of RAM left.

The waters were further muddied by the fact that artWorks appears not to support a broad range of TIFF formats. Although TIFF is standard for handling bit



artWorks is largely the fruit of the union of Deneba Software's Canvas and UltraPaint programs. The Pen Size palette and the extensive use of Tool Managers, among other features, mimic Canvas. Twenty-two tools and functions have managers.



artWorks supports many filters, both resident and imported. The Crystal filter was applied to the lower photograph, resulting in the top image.

maps, it has many variations. For example, artWorks couldn't open some TIFF files that opened fine in Photoshop.

Despite this problem, artWorks, like Canvas, supports an impressive array of export and import file formats. In addition to some TIFF formats, artWorks supports Canvas, Encapsulated PostScript, GIF (Graphic Interchange Format), Illustrator 1.1 and Illustrator 88, MacDraw I, MacDraw II, PICT, Startup Screen, and UltraPaint. Exported files can also be saved as QuickTime PICT or QuickTime Movie files.

The artWorks manual, which contains four tutorials, is generally very helpful but contains no color illustrations. Also, none of the Filter Effect items is mentioned in the index.

**Conclusions.** We'd like to see more-consistent memory handling, broader support for TIFF formats, more-robust text handling and true support for Canvas external tools. But overall, artWorks is a welcome addition to the crowded graphic arts software scene. It offers the

low-end user much of the muscle found in Canvas, sports a capable painting module and comes with an impressive array of external tools to augment both Paint and Draw functions. And you couldn't ask for a more appealing price.

Registered U.S. and Canadian owners of UltraPaint can upgrade to artWorks for \$49; U.S. and Canadian owners of Microsoft Works, ClarisWorks, GreatWorks and Ragtime can obtain artWorks for \$79. artWorks comes with a 60-day money-back guarantee.

Deneba Software is at 7400 S.W. 87th Ave., Miami, Fla. 33173. Phone (305) 596-5644; fax (305) 273-9069. □

## SYSTEM 7 COMPATIBILITY

### artWorks 1.0

Balloon help	Yes
TrueType	Yes
Publish and subscribe	Yes
Apple events	Yes
32-bit addressing*	Yes

\*According to vendor.

## score card

### artWorks

Deneba Software  
Version tested: 1.0  
List price: \$149  
Overall value ♦♦♦♦

Deneba Software has married the best of Canvas, its popular drawing program, with the best of UltraPaint, its lackluster painting program, to create a powerful entry-level drawing and painting program. The System 7-savvy artWorks has an impressive feature set, particularly when you consider its \$149 list price. It sports 24-bit painting, Bezier curves and custom patterns. It supports QuickTime, Aldus Gallery Effects, and Photoshop Acquire and Effects plug-ins. We had mixed results working with artWorks' virtual-memory function, however, and the program doesn't support a broad range of TIFF formats, nor does it support Canvas' external tools. Despite these concerns, artWorks is a very good buy if you don't need the full functionality of a drawing package such as Canvas.

Performance ♦♦♦♦  
Features ♦♦♦♦  
Ease of use ♦♦♦♦  
Documentation/support ♦♦♦♦



# Latest PB utility welcome addition

## On the Road with Palomar Software

By Dale Coleman

If battery management were the whole story, there would be little need for yet another PowerBook utility product.

But there's more to PowerBook resource management than batteries and custom cursors. On the Road, Palomar Software Inc.'s \$99 utility, ably addresses mobile connectivity, which is an entirely different set of mobile computing concerns.

On the Road can defer printing and faxing automatically until you connect the PowerBook to either a network, phone line or dock. In addition, you can train On the Road to recognize and distinguish between networks and docks to which you connect regularly and have it mount network volumes, either automatically or at your discretion. You can also have On the Road open documents and launch specified applications and desk accessories for each environment to which you might connect.

On the Road consists of a system extension that installs its menu icon on the right side of the menu bar and an application. Both the extension and the application are installed in the System Extensions folder, a fact that may trouble some organization purists.

There are two steps to the On the Road process: determining what you're plugged into and then specifying what actions to take. These actions include such things as printing and faxing any spooled documents, mounting network volumes, and launching user-specified applications and opening user-specified documents.

On the Road determines your "location" by scanning the devices connected to your PowerBook each time you start or wake it up. These include available network volumes and other external devices such as a telephone line or a docking station.

When no printer is connected to the PowerBook, On the Road spools documents for printing later. In this condition, the Print button in the print dialog box is replaced by a Defer button.

You can cancel print jobs easily or redirect deferred jobs to a different printer. The only requirement to changing the target printer of a deferred job is that the printer must use the same (or compatible) printer driver. For example, you cannot redirect a deferred print job from a PostScript LaserWriter to an Apple StyleWriter.

On the Road can defer output from the most common printers as long as background printing is enabled. If you direct a deferred print job to a printer for which background printing is disabled, On the Road will enable it automatically. Supported printers include Apple LaserWriters and StyleWriters (including the StyleWriter II); Hewlett-Packard Co.'s LaserJets, DeskWriters, PaintJets and PaintWriters; Eastman Kodak Co.'s EktaPlus; and plotters using Palomar's Plottergeist.

Internal fax modems from Global Village Communication Inc. and PSI Integration Inc. and most fax modems compatible with FaxSTF with FaxPrint are supported, as is Apple's popular Fax/Data Modem. The Duo Express Modem will be supported in the upcoming maintenance release, which is scheduled for late this month.

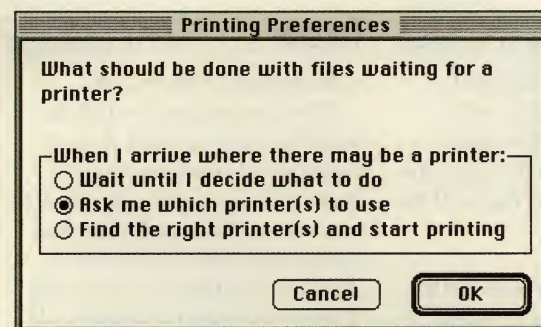
In addition to standard AppleTalk networks, On the Road recog-

nizes EtherTalk and AppleTalk Remote Access (ARA).

**The itinerary.** The On the Road menu is divided into related functions: change location, mount volumes and change printer; defer printing and defer faxing; turn off AppleTalk and disconnect from ARA; specify internal or external modem; and open the application.

The application lets you manage behavioral aspects of On the Road features. For printing you can view a list of deferred jobs and specify where these are to be printed once connected to a network, or you can schedule deferred faxes to go at a specified time once a phone line is detected. Other options include deciding how network volumes should be mounted, choosing when AppleTalk should be turned on or off, modifying how On the Road identifies a location, and editing a list of known locations.

**Road fare.** This all works very easily. When you connect to a recognized network, On the Road can change the Chooser-selected print device automatically from the one that was active when you issued the deferred print command to the one you specified the last time you were connected to that network. This feature means that as long as you are using printers that use the same or compatible printer drivers, you can basically forget about the destination printer until it comes time to physically retrieve the printed output. Deferred printing and faxing



When you reconnect the PowerBook to a network, you can tell On the Road which printer to use, tell it to ask which printer to use, or tell it to find the printer last used at this location and begin printing.

are extremely useful when you're traveling. We regularly shuttle a PowerBook between two offices, so we particularly appreciate On the Road's ability to choose network printers and mount network volumes automatically.

The Custom Arrival Actions feature works as a location-specific Start-up folder for each defined location. It is conceptually related to the operating system's Start-up folder and is very helpful. For each location, On the Road creates a folder with the location's name that includes an alias for each network volume at that location. You can put your own items in this folder and, thus, greatly customize your portable virtual environment. For example, for our office setup we put aliases of the network electronic mail and our word processor in that location's Startup for On the Road folder. A file-synchronization utility is an excellent candidate for use with this feature.

The Disconnect from AppleTalk Remote command is a major convenience. With this single command you can both close the ARA connection and quit the ARA application, saving both several steps and 230 Kbytes of RAM.

**Less than perfect.** Our complaints are relatively minor. We dis-

covered a small bug in Version 1.0 that caused AppleTalk to be turned off despite our having checked the AppleTalk Always On preference option. Palomar said a maintenance release has fixed this problem, and other features, including support for Novell NetWare, the Apple Express Modem and PostScript Level II, have been added to Version 1.1, shipping this month.

Turning off AppleTalk to save battery life annoys us because it isn't logically related to the other On the Road missions.

On the Road would suit our temperament better if the designers would give it less of a Big Brother attitude. For example, if you decide to deselect deferred printing from the menu, On the Road takes it upon itself to check for the availability of an appropriate printer and, if one is not found, imperiously informs you that printing will remain deferred. On the Road takes a couple of seconds to detect the absence of the printer. In the meantime, you may have moved on to other tasks and then will find the rude dialog distracting. Second, it's your PowerBook, and if you want to disable deferred printing, we can think of no credible reason why your judgment shouldn't take

See On the Road, next page

## score card

### On the Road

Palomar Software Inc.

Overall value ♦♦♦♦

Version tested: 1.0

List price: \$99

There's more to PowerBook resource management than battery life and fat cursors. On the Road provides deferred printing and faxing so you can issue print and fax commands when you're away from the printer and phone line, then have the documents printed and faxed automatically when the PowerBook is reconnected. In addition, it offers an automatic remounting function that can be adequately described as Apple's Auto Remounter with a brain. In addition to remounting, On the Road can open different documents, applications and desk accessories automatically based on the environment to which you are reconnecting. The automatic AppleTalk-management feature, however, is an aspect best left to battery-charge-management utilities.

Performance ♦♦♦♦  
Features ♦♦♦♦

Ease of use ♦♦♦♦  
Documentation/support ♦♦♦♦



## Media Suite Pro users express Avid support

I found your recent review of Avid Technology Inc.'s Media Suite Pro (MacWEEK, March 29) to be completely off the mark in defining the product and describing its features.

I am a video producer for the Massachusetts Criminal Justice Training Council, with more than 10 years of experience in producing corporate, industrial and training videos. I have been working with the Media Suite Pro since Decem-

ber 1992 and have found it not only fast and feature rich but crash-free.

Having this system has allowed me to edit programs with effects and titles/graphics that would be impossible to create on my half-inch system. One of the programs included more than 30 titles/graphics that were very complex and supered with dissolves, and the system *never* crashed. The Media Suite Pro offers the "industrial" and "corporate" producers all the bells and whistles our low-budget programs would never allow.

I am confused as to why you would compare such a system to Adobe Premiere when the Media Suite Pro offers so much more high-quality production and output to virtually any tape format, making creative production affordable to the industrial producer.

I am required to produce high-

quality video programs and output them in real time to tape for distribution. None of the QuickTime multimedia software you mentioned offers this.

I sincerely believe your review of the Media Suite Pro was for the wrong audience. If you had corporate and industrial video producers in mind, you would have had high marks for the system.

Georgia Fianos, video producer  
The Commonwealth of Massachusetts  
Needham, Mass.

I have been a longtime user of Avid products, and my company is now a dealer of Avid systems.

Sonja Schenk's review of Media Suite Pro, although exhaustive in many respects, was somewhat uneven in its review and evaluation

See Forum, next page

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI (323-1203); fax (415) 243-3650. Include your name, address and phone number. We reserve the right to edit for clarity and length.



## On the Road *From previous page*

precedence over On the Road's.

The documentation is well-organized and quite thorough. The program's balloon help is actually useful, a condition that is all too uncommon.

**Conclusions.** We give On the Road very good marks for a new utility that is both innovative and truly useful. You'll have to make peace with its imperious nature, but overall we think the advantages of its many features, including deferred printing and environment recognition, make it a compelling product.

Palomar Software Inc. is at 2964 Oceanside Blvd., Suite D, Oceanside, Calif. 92054. Phone (619) 721-7000; fax (619) 721-4758. □

### SYSTEM 7 COMPATIBILITY

#### On the Road 1.0

Balloon help	Yes
TrueType	n/a
Publish and subscribe	n/a
Apple events	Yes
32-bit addressing*	Yes

\*According to vendor.

## Forum

*From previous page*

of the features of the system.

The strongest feature of Media Suite Pro is its raw speed. Among the projects I've produced on the system thus far was an eight-minute motivational video with more than 100 individual edits, many match dissolves and extensive beat cutting. The entire project took less than 15 hours to produce, including about six hours of sorting through about 30 different source tapes and capturing the desired material.

Schenk mentioned that a 2-Gbyte drive should be "enough for a two-minute project with a generous 12-to-1 shooting ratio." While a 12-to-1 shooting ratio is certainly generous, I would never think of capturing all of the material to hard drive! With paper cutting, a ratio between 2-to-1 and 4-to-1 is closer to what you'll capture to the drive.

Although it is true that the audio tool needs enhancement, the fact that you cannot increase the volume of a clip is not really a problem. Since the line level coming out of the system has to be pulled down significantly when recording out to tape, I was able to balance all the sound in the programs I created by pulling down the levels on all clips

and balancing from there. One may consider it a work-around, but I've never worked on a mixing board with the gains pushed all the way up while mixing.

While much of her criticism of the text tool is deserved, I have yet to have a crash using any Type 1 or TrueType typeface. Perhaps the source of her crashing problem lies elsewhere. I've certainly seen it happen before. I've used the (as-yet-unreleased) 1.1 text tool, and it is much improved.

Her comments on the "sheer number of bugs" also leave me confused. I had two crashes during the use of the system (quite good for a Macintosh hardware/software solution) and have not experienced any problems with custom sort. There are certainly a few glitches in the interface, and as she correctly stated, a few dialogs make little to no sense. I fully expect Avid to address these problems in the 1.1 release. Avid's track record on updates on the Composer line is excellent.

Most importantly, with Media Suite Pro I've never worried about going to tape. The same cannot be said for the QuickTime-based solutions. Sync is always rock solid, and the effects have to be processed only at the time of creation. Media

Suite Pro exceeded my expectations and, in my opinion, is the only on-line digital editing system I've seen, excluding the high-end and much-higher-cost systems, that can be counted on to work every time.

*Gregory Staten, training manager  
Design Network  
Houston*

### MacWEEK replies:

We concede that the hardware Avid originally hand-delivered and installed for us could have been flawed and that the many crashes we experienced may have been because of a problem, such as "bad RAM," which Avid suggested as a possible culprit. However, when the Avid software was not in use we had no problems on the Quadra with other applications — such as Macromedia Director, Adobe Photoshop, Microsoft Word, Adobe Illustrator and Adobe Premiere — and we were able to use extensions and low-level processes such as Adobe Type Manager and AppleTalk.

Avid hand-delivered a replacement system that also promptly crashed, further convincing us that the apparent problems were more than a fluke. Avid's technical support was quick to return our calls but did not have an explanation for our problems.

As far as why we briefly compared the Media Suite Pro to Adobe Premiere and other multimedia products in a sidebar, Avid's own press release, dated Jan. 29, stated plainly that "applications for Media Suite Pro include corporate presentations, instructional videos and multimedia programs." The main review made few comparisons with software-based applications such as Premiere.

We reviewed the system as Avid sells it. We stand by our conclusion that the Media Suite Pro is a remarkably fast and capable video-editing system that lacks features and refinements in the areas of audio, graphics and special effects, making it a marginal multimedia application, bugs notwithstanding.

### For the record

In our April 5 review of Multi-Ad Services Inc.'s Multi-Ad Creator, we mistakenly reported that the program lacks the capability to import Desktop Color Separation files. In fact, while it is not documented, the program both imports and exports this format.

## MAC SCREEN TO BIG SCREEN

The Perfect Travelling Companion... The BOXLIGHT 1320 offers full 24 bit color in a 5 lb. package. Display large screen computer data, Quicktime or multimedia anywhere you go!



- 16.7 million colors • 640x480 resolution • FREE hard carry case
- Optional video decoder for VCR's or TV's • Smallest LCD panel available
- Cabeling for both Macs and IBM compatibles

BOXLIGHT provides:

- Knowledgeable staff • Guaranteed satisfaction • Same day shipping
- Choose from over 50 models • Call for free catalog

### BOXLIGHT Corporation

17771 Fjord Dr., NE, Poulsbo, WA 98370 (800) 497-4007 or (206) 779-7901 Fax: (206) 779-3299

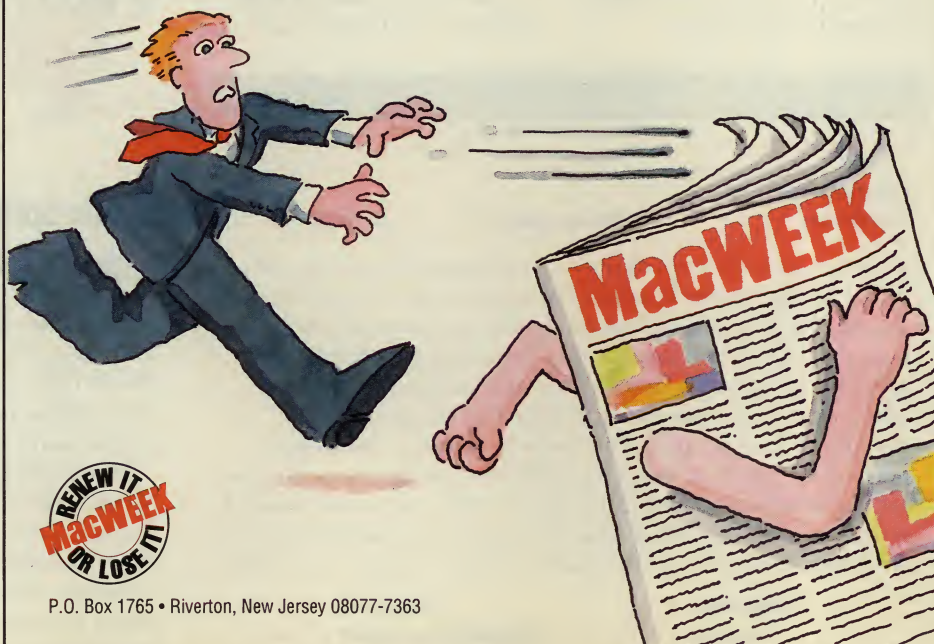
## KEEP UP WITH MacWEEK

**Return your MacWEEK renewal application as soon as you receive it!**

If you're serious about your Mac you can't afford to miss a single issue of **MacWEEK**, the only resource of its kind for today's dedicated Macintosh professional.

**MacWEEK** has it all — timely news, extensive product reviews and lab tests, informed opinion, and expert buying guidance.

Keep your **FREE MacWEEK** subscription coming. Return your renewal application as soon as you receive it. Don't let your next issue of **MacWEEK** be your last!



P.O. Box 1765 • Riverton, New Jersey 08077-7363



# IT MAKES WORKING WITH YOUR HOST A COLLABORATION. NOT A COMPROMISE.

When it comes to friendliness and ease of use, a mainframe is the antithesis of a Macintosh®. But with IRMA™ WorkStation for Macintosh, your Mac® can become a full partner with your host, creating a powerful synergistic collaboration.

IRMA WorkStation for Macintosh now adds NetWare for SAA® and TN3270



It runs with NetWare IWM now supports NetWare for SAA.

over TCP/IP support to an already impressive list of connectivity options. It includes productivity enhancers like

KeyStroke Macros, to automate common tasks; QuickPad™ and QuickHit™, for point-and-click navigation of host applications; and QuickPoints™, to simultaneously resize screen and fonts.

The recent merger

PF1 Process C  
PF2 Open the r  
PF3 Search for

QuickHit lets you execute PF keys with a click.

QuickPad, QuickHit and QuickPoint productivity enhancers, multiple sessions, APA graphics and full System 7 support are just a few of IWM's strengths.

with Avatar® has further strengthened DCA's commitment to the Mac marketplace. And now, our

combined resources are focused on advancing the most comprehensive suite of Mac connectivity products ever. In fact, we offer the only complete line of Mac-to-host software and token-ring and coax hardware. As well as the only family of micro-to-host solutions for



Mac, DOS, Windows™ and OS/2®.

Until June 30, you can trade up to IWM from an earlier version—or any competitive product—for only \$95. (That's \$330 off the suggested retail price. And the price can be even less, when you buy MultiPaks of 10, 50 or 100.) You can also call for free demo disks and our new Mac-to-Mainframe

Connectivity Guide.

## IRMA WORKSTATION FOR MACINTOSH

**HOST CONNECTION:** CUT, DFT, 802.2, TN3270 over TCP/IP.

**GATEWAY CLIENT SUPPORT:** NetWare for SAA, IRMALAN™/EP, DCA Select™ Comm Server,\*\* DEC GAI,\* IBM® OS/2 EE and PC3270.

**FILE TRANSFER:** DCA/FT Express™, IRMALINK® FT/TSO and FT/CMS, IBM IND\$FILE.

**API SUPPORT:** HLLAPI, Application Development Tool Kit.

So stop compromising. Call 1-800-348-3221, ext. 40H\*, and be part of a powerful collaboration.

THE FREEDOM  
TO COMMUNICATE.

DCA

\*Or call (404) 475-8380 if outside the U.S. and Canada. Upgrade good in U.S. and Canada only, through 6/30/93. Allow 6-8 weeks for delivery. ©1993 Digital Communications Associates, Inc. All rights reserved. DCA and IRMALINK are registered trademarks and IRMA, QuickPad, QuickHit, QuickPoint, FT/Express, IRMALAN and Select are trademarks of Digital Communications Associates, Inc. Windows is a trademark of Microsoft Corporation. All other trademarks are property of their owners. \*\*Coming soon. \*With Avatar's MacMainFrame.



# La Cie's PocketDrive™ is a snap.

## Unbelievable connectivity.

With La Cie's PocketDrive, you can enjoy the convenience of our exclusive T-Connector or PocketDock™—the desktop accessories that make connecting and disconnecting your PocketDrive a snap. Our "T" and "Dock" have built-in active on/off SCSI termination, SCSI I.D. and a pass through SCSI connector. So you can leave them in your SCSI chain, even when your PocketDrive is on the go.

## Unforgettable portability.

With La Cie's PocketDrive, you'll never forget a file. Every time you move your PocketDrive all your files and applications go too. Imagine owning a PocketDrive, under 10 ounces, up to 160MB of Quantum performance in the palm of your hand.

## Unsurpassed flexibility.

La Cie's PocketDrive comes with our unique T-connector which allows you to snap it to the back of almost any Macintosh. Or you can also get a PocketDock for only \$59. For more complete connectivity, our PocketDrive 110V Accessory Kit comes complete with HDI PowerBook cable, SCSI adapter, SCSI cable, and AC adapter for only \$69.

## Service and value firmly in your grasp.

With Silverlining drive management software, Apple System 6 and 7 pre-installed, a 30-day money-back guarantee, unlimited toll-free telephone support, 2-year warranty and the confidence that comes with buying direct from a Quantum company, with Fortune 500 resources, it's easy to see why so many people are snapping up PocketDrive.

"Lightweight, portable, well-designed these external drives are a great option." Macweek

PocketDrives from  
**\$299**

ALSO SEE OUR CATALOG OF  
PRODUCTS IN THE BACK  
SECTION OF THIS PUBLICATION



We know hard drives inside and out.

# 800-999-1476

International 503-520-9000 Fax 503-520-9100 9 a.m.-6 p.m. PST Mon-Fri WAX, MasterCard, E.C.O. and approved purchase orders accepted.

\*Call for details on terms, conditions, limited money back guarantee and restrictions. System 1.0.1 software included only with certain configurations. 2PP's Drives do not have writeable schematics. Prices do not include shipping and only apply to products shipped within the continental United States. Please contact La Cie for international distribution. Add sales tax where applicable. ZPP, ZPP+, Circle, Titanium, PocketDrive, PocketDock, ExpressDrive, SilverScan, SilverScan+, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. FORTUNE 500 is a registered trademark of the Time Inc. Magazine Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. © Copyright 1993 La Cie, Ltd. 8700 SW Creekside Place, Beaverton, OR 97005 Phone: (503) 520-9000, Fax: (503) 520-9100. All rights reserved. Printed in U.S.A.

**LACIE**  
**LIMITED**  
A QUANTUM COMPANY





## Getting the big picture on large-monitor specs

*The variety of large-monitor specifications can be confusing. Here's a guide on what to look for before you buy.*

**By Clay Andres**

Although a large-screen monitor and the required color video card together still cost more than many Mac systems, today the price is about half what the first units cost. These large displays are more popular than ever, especially in markets such as color pre-press and graphic arts, which use 24-bit color. And where there is a buyer, you're sure to find a seller; a plethora of vendors offer numerous, often confusing, variations on the large-monitor theme.

### Choosing among brands.

With the newest Trinitron picture-tube technology from Sony Corp. of America being offered by several sources and other quality tubes available from makers such as Hitachi America Ltd. and NEC Technologies Inc., how do you decide which monitor to get?

Ultimately, experts say you have to judge for yourself; while the monitor may be true to specifications, the sharpness, brightness and other key features may vary depending on the vendor's implementation.

"Even though it's the same OEM picture tube, there's sometimes fuzziness in the corners of the screen, depending on the brand," said Harold Mann, principal of Mann Consulting, a multimedia consulting company in San Francisco that uses large-screen monitors from Radius Inc.

But every company has its satisfied customers. Paul Evenson, vice president of Montgomery Securities Inc., an investment bank in San Francisco, said, "If you put the [two-page monitor] screens next to each other, the whites are just whiter on the SuperMac [Technology Inc. monitor]." Montgomery has nearly 100 Mac workstations using a variety of SuperMac monitors on the trading floor. "We have stockbrokers watching the screens all day. SuperMac outshone everybody in that crisp, clear look."

### Sony dominates market.

Even though other vendors vie for market share, Sony's Trinitron picture-tube technology overwhelmingly dominates the market for large color monitors. NEC, like Mitsubishi Electronics America

Inc. and Hitachi, sells its own big Mac displays, but according to analysts, only Hitachi has had any success as an OEM supplier. Most 19- and 20-inch color monitors are Sony Trinitrons; most 21-inch monitors come from Hitachi.

Although most Macintosh color-monitor vendors offer Sony's 20-inch Trinitron picture tube, Hitachi and NEC make tubes that some people consider sharper than the original Trinitrons. "Sony has to continually improve because the others keep catching up," said Jack Roberts, industry analyst for Dataquest Inc. of San Jose, Calif.

To meet this challenge, Sony has introduced a new picture tube, the Digital Control Trinitron Monitor GDM-2038 under the Sony name or the Trinitron 3.5 for OEMs.

Versions are available from Sony, SuperMac, RasterOps Corp. and Radius, all of which started shipping in March. It has the same dimensions as the familiar 20-inch Trinitron, and it retains the multi-scanning capability that lets it produce multiple resolutions on the same monitor.

In addition to the improved tube, Sony has added a microprocessor that gives its display more resolution choices and higher-resolution options, higher refresh rates, and some new controls.

There are all the usual control knobs for features such as brightness and contrast, plus controls to adjust the visual geometry of the display.

If you've ever had your 1- or 2-year-old display taken apart and adjusted by a technician, you can immediately appreciate the convenience of having these controls on the front panel. Furthermore, all the controls can be set from your Mac by connecting it to the service port in the back if the monitor implements that feature.

"Being able to adjust the absolute brightness and contrast from the keyboard makes maintenance a lot easier," said Kevin Alexander, vice president of Desknet Inc., a system integrator and consulting company in New York.

**Implementing features.** Not all monitor vendors (including Sony)



SCOTT CAMPBELL

make every feature available, and this is what will determine the price and market niches for the various incarnations of large-size displays.

SuperMac's SuperMatch High-Res 20 Trinitron Display and the Radius IntelliColor Display/20 come with software that lets you control all of the display's settings from the keyboard.

The lower-priced SuperMatch 20•T XL and the new RasterOps/20T Multiscan Color Display will not include that software. However, RasterOps is making the software available to its trained dealers, since the company said it is more of a service issue than a user feature.

RasterOps is upgrading its CorrectColor/20T in April. This monitor, intended for color-critical work, includes hardware and software for a flat-field luminance-calibration system. The system is meant to ensure corner-to-corner color accuracy and uniform brightness by averaging readings across the display. Once the monitor is calibrated, you can adjust the characterization of the display to suit different viewing conditions.

**Service and support.** Other important buying considerations include warranties and support

*See Monitors, Page 68*

## Case Study

### Sony the big choice at Capps Studios

**Ad agency**

**subsidiary**

**makes move**

**to large**

**monitors.**

**By Clay Andres**

Capps Studios, a wholly owned subsidiary of the giant international ad agency Leo Burnett Co. Inc. of Chicago, went directly to the source recently when it bought 40 20-inch Trinitron monitors from Sony Corp. of America.

Capps, a full-service advertising print production studio, decided to convert to Macintosh and hired Andy Hullinger as Macintosh special projects leader.

Two years later, 20 production artists work mostly at Quadra 950s using Adobe Illustrator and Photoshop, Aldus FreeHand, and QuarkXPress — and Sony monitors. The other 20 monitors went to another Leo Burnett division.

**Video-in, -out needs.**

"We know we want to be able to take advantage of QuickTime and multimedia," Hullinger said. "The Sony is the only monitor with all the controls on the front and inputs and outputs out the back. We knew we wanted to take advantage of that."

So even though Hullinger bought video cards from RasterOps Corp. and SuperMac Technology Inc., the multimedia capability of the Sony-branded display with its extra video input and output ports swayed his monitor purchase decision. "All the OEM versions we saw had a different plastic covering with no openings in the back."

*See Capps, Page 68*



# INTRODUCING WORDPERFECT<sup>®</sup> EVEN BEFORE IT WAS LAUNCHED,

When WordPerfect<sup>®</sup> set out to give Macintosh users the ultimate works package, we didn't head for the drawing board. We headed for the most powerful works program in the industry – Beagleworks<sup>™</sup>. A program widely considered to be the top integrated package you can buy.

FEATURE	WORDPERFECT WORKS	CLARIS WORKS	GREAT WORKS	MICROSOFT WORKS
In-Context Editing <sup>™</sup> (multiple documents)	YES	NO	NO	NO
Paint and Draw	256 custom	81 draw	256	NO
Common tool bar with module-specific tools	YES	NO	NO	NO
Log-in scripts/phone book	YES	NO	NO	YES
Multiple columns can be turned on/off anywhere on the page	YES	NO	NO	NO
Auto Sum Tool	YES	NO	NO	NO

Then, we improved it, and backed it with a team of support specialists that are unmatched in the industry.

Seamless is the best way

to describe using

WordPerfect Works.

Thanks to a break-

through technology called In-

Context Editing that optimizes System 7's Publish and

Subscribe feature, you can get into any of its modules



*Imagine a works program  
so incredibly seamless,  
its various applications  
(word processing,  
draw and paint, chart,  
database, spreadsheet  
and communication)  
feel like one.*

(word processing, database, spreadsheet, chart, draw and paint) without leaving your current document. Double-click on an item, and the menu and tool bar change automatically to correspond to the program you're using.



# WORKS. IT WAS RATED THE BEST.



*Text runaround, multiple section layouts and custom type styles help give WordPerfect Works the best desktop publishing capabilities of any word processor.*

Even in System 6, you can edit information in a new document and have both the original and the new linked document instantly updated.

And when it comes to the other applications in WordPerfect Works, there are no weak links. In the spreadsheet, there's an automatic sum tool and in-cell editing. In both the paint and

draw modules, you get 128 custom fill patterns and 256 custom colors. The communications module gives you editable log-on scripts.



And one look at the screen on this page and you'll see what sets the word processor apart: multiple columns, irregular text wrap (something many desktop publishing programs can't do), and more.

But to truly appreciate what WordPerfect Works Macintosh can do, see your dealer or give us a call at (800) 526-5003. And discover a brand-new product that's already a legend.

WordPerfect is a registered trademark of WordPerfect Corporation within the United States and other countries. All other brand and product names are trademarks or registered trademarks of their respective companies. © WordPerfect Corporation 1993.



# WordPerfect®



## Capps

From Page 65

What also swayed his decision was that Sony offered them the best price. "And we felt we would get the best support by going directly to the Trinitron source." Indeed, they got a plane load of support.

When the first batch of monitors Sony shipped had problems, Sony flew a dozen technicians to Chicago to set things right.

Although the company thought the problem might be environmental rather than in the monitors, the company "sent replacements and actually retooled them to tighter specs," Hullinger said.

It turned out that Hullinger and

his crew had been using the front controls to go beyond factory specifications to eliminate the black border around the active display.

**Happy ending.** Now, better educated about the intricacies of adjustment and less zealous about customizing the display, Hullinger is satisfied with the monitors. "I've been really pleased with the comfort of sitting in front of one. We offer polarizing filters to everyone, but no one has wanted them yet," he said.

As far as using the Sony displays with different video cards, "We can't tell which card is in which machine without looking at the software," Hullinger said. □



Andy Hullinger, Macintosh special projects leader for Capps Studios, purchased 20 large-screen Sony monitors for the company's design and production division.

GARY SIGMAN/BLACK STAR

## Monitors

From Page 65

from both the monitor vendor and the dealer.

Warranties are usually standard. SuperMac and RasterOps both offer three-year warranties, while most other vendors offer one-year warranties. However, issues such as dealer competence are not directly under the vendor's control.

"We had a bad experience with a RasterOps dealer, but we found a good local dealer for SuperMac," said Rob Aronson, director of imaging for USA Today in Alexandria, Va.

On the other hand, Desknet's Alexander said: "Price per value and support are best from RasterOps. You never have to wait on the phone." According to Alexander, waiting for technical support can add up for a company like Desknet, which provides technical support for the large volume of two-page displays that it sells each year.

Multimedia consultant Mann said he gets good service from a

large company such as Radius. "It can afford to have the staff so that you don't have to wait on the phone," Mann said. "What you might save by going to a smaller supplier you can easily lose by waiting for support."

**Prices.** Few people buying two-page displays are looking strictly at price. They look for the best price-performance ratio, something that is hard to evaluate in light of so many opinions about quality and support.

"There is no point in buying high-end color monitors for spot color for approval; we do that kind of work on the calibrated color prepress workstation," said Paul Herzig, systems manager for P&H Photo Composition Inc., a type, color and high-end composition shop in Minneapolis.

"We have some SuperMacs and a Radius, but the difference between those and our ProViews (from Mirror Technologies Inc.) is minor," he said.

Based on the Sony Trinitron

picture tube, Mirror sells its displays bundled with video cards for less than the price of the monitor alone from other vendors. "If someone could prove to me that there was something appreciably better in the same price range and at the same level of service," Herzig said, "I'd buy it."

**True monitor size.** Not all 19-, 20- and 21-inch monitors are true two-page displays. According to experts, only 21-inch models can show two side-by-side letter-size pages at actual size, and even that's stretching the definition a bit. To confuse matters further, many 20-inch monitors (including the Trinitrons) show only 19 diagonal inches of glass.

Ultimately, the true measure of a monitor is its resolution. According to experts, the standard for true two-page displays is 1,152 by 870 pixels, which fits in a 21-inch monitor at between 77 and 79 dpi, not quite the 72-dpi standard for Apple WYSIWYG.

Most 21-inch displays are Mac-only, single-resolution displays; however, the 19- to 20-inch displays have slightly less screen real estate but more options. The standard resolution for the less expensive, single-mode 19- to 20-inch displays is 1,024 by 768 pixels at 72 dpi.

**Multiresolution, multimode.** Multiresolution monitors, which can display in two or more resolutions, can emulate the 21-inch resolution at 82 dpi or even the 13-inch standard resolution of 640 by 480 pixels. This resolution is useful for multimedia developers and those creating presentations for viewing on large displays. Sigma Designs makes multimode monitors that can emulate six or seven resolutions.

Keith Ellis, vice president of marketing and sales for Blueridge Technologies Inc. of Flint Hill, Va., said that 120 dpi "is perfect for view-

ing bit-mapped text images." Blueridge develops and sells the Optix document-imaging system bundled with Sigma's MultiMode 120 gray-scale monitor. "Many of the documents we're moving around or viewing are scanned at 200 dpi," Ellis said. "They're decimated at 72 dpi. You can't read them."

For sites with both Macs and IBM PCs and compatibles, it's sometimes convenient to standardize on multimode monitors that can accept signals from both platforms, such as those from Mitsubishi, Nanao USA Corp., NEC, Seiko Instruments USA Inc., Sony and others.

The resolution of these monitors will depend on which Mac model you're using, the interface cable and any video board you have installed.

**Large-size gray scale.** While the big news and developments in monitor technology may be taking place in the 24-bit world, there are many applications that, like the Optix document-imaging system, work better in gray scale.

There are still many two-page gray-scale monitors available, and they are a relative bargain compared with their color cousins. Nutmeg Systems, which bundles its video cards with the displays, offers an upgrade path from gray to color.

**Electromagnetic concerns.** While all monitor manufacturers are trying to bring down the levels of electromagnetic radiation, some are using lower emissions levels as a selling point.

Sigma and others advertise that they meet the MPR II Swedish emission standard for magnetic extremely low frequency and very low frequency. According to Sony, both the new and old Trinitron picture tubes meet this specification, and most OEMs using Trinitron tubes should be MPR II-compliant.

Whether emissions, resolution, upgrade paths, color calibration or

See Monitors, Page 70

## Monitors Rex: Giant Mac monitors for presentations

Think your 20-inch monitor is big? Try putting one of Mitsubishi Electronics America Inc.'s 37-inch, 200-pound monitors on your desk. It's sure to make your presentation more earthshaking. Or, for a slightly lighter load, there are 33-inch models from Mitsubishi and Barco Inc. and a 28-inch version from Barco.

These displays are actually too big to fit on a Macintosh but can be a hit when making a Mac-based presentation. They plug right into your Mac and behave like any other monitor, except that you can gather a crowd around to see the show.

Macromedia Inc., the multimedia software developer in San Francisco, was one of the first customers to receive a Mitsubishi presentation monitor in 1987, and it has been using them extensively ever since. Theresa O'Brien, a marketing manager at Macromedia, said she takes the 33-inch Mitsubishi display to all trade shows. "It's the only monitor that can give me that kind of resolution in a trade-show environ-

ment," she said. Macromedia uses heavier, 37-inch displays in more-permanent locations for training and conferences.

The alternatives to large presentation monitors are projectors of various kinds, but Harold Mann, principal of Mann Consulting, a multimedia consulting company in San Francisco, prefers his Mitsubishi monitor.

"I'm doing presentations where we have 15 minutes to set up," Mann said. "It can take forever to get the alignment on a projector correct."

Also, Mann doesn't like to turn the lights off during presentations: "It's an invitation to sleep," Mann said. "I can't overemphasize the importance of making eye contact with the audience."

Mann also takes full advantage of the capability to use multiple video sources as well as both Macs and IBM PCs and compatibles. But he said 15 people is the limit for viewing a single monitor. After that you need multiple displays or a larger-screen projector. — By Clay Andres



**D** I A M O N D P R O 1 7

# Mac Smart



**TWO-YEAR WARRANTY**

**TRINITRON® 17" CRT**

**VERY HIGH RESOLUTION**


**COLOR CALIBRATION SYSTEM**

**LOW EMISSION DESIGN**

The Mitsubishi Diamond Pro® 17 is the ideal Macintosh® monitor for desktop publishing, graphic design, multimedia or image processing. It offers a large display with the most compact enclosure of any 17" flat-square or Trinitron monitor.

The high-resolution Diamond Pro 17 has a fine pitch (0.25 mm), vertically flat, square-cornered Trinitron CRT and features Mitsubishi's DigiCon™ digital convergence control and the Diamond Match Color Calibration System for color-critical applications. It's compatible\* with Macintosh graphics standards at 640 x 480, Quadra® 832 x 624 and Apple® standard 72 DPI. And with its MPU-based, auto-scanning capability, the Diamond Pro 17 enables you to upgrade your system for use with third party color boards offered by companies such as RasterOps®, Radius™, SuperMac™ and E-Machines™.

For more information on the smart choice, call Mitsubishi Electronics at 1-800-843-2515. In Canada, call 1-800-387-9630 or in Mexico 91-800-83456.

 **MITSUBISHI**  
INFORMATION SYSTEMS DIVISION

Mitsubishi Electronics America, Inc., Information Systems Division, 5665 Plaza Drive, Cypress, CA 90630.  
Mitsubishi Electric Sales Canada, Inc., 4299 14th Avenue, Markham, Ontario L3R 0J2.

© 1992 Mitsubishi Electronics America, Inc. Trinitron is a registered trademark of Sony Corp. All other trademarks or registered trademarks are the property of their respective holders.

\*Mac LC, Mac II or Quadra cable adapters available at no charge from your dealer.



## Monitors

From Page 68

some other factor is your key criteria, if you find a display with unique features or a combination of features you need, your decision is probably made.

As always, price may be the deciding factor. But with so many similar monitors, the final choice may fall on an intangible: perceived looks, reputation for support or a local dealer that you trust. □

## Product Info

BARCO INC.

**MultiData II 28-Inch:** \$4,195;**MultiData II 33-Inch:** \$5,195

1000 Cobb Place Blvd., Kennesaw, Ga. 30144

Phone (404) 590-7900;

fax (404) 590-8836

HITACHI AMERICA LTD.

OFFICE AUTOMATION SYSTEMS DIVISION

6 Pearl Court, Allendale, N.J. 07401

Phone (201) 825-8000; fax (201) 825-4781

MIRROR TECHNOLOGIES INC.

**Mirror PixelView II:** \$799 (includes adapter);**Mirror PixelView 2100:** \$999; **ProView Trinitron Display:** \$2,499 for eight-bit color or \$2,799for 24-bit color (includes card); **ProView V Color****Display:** \$1,799 for eight-bit color or \$2,099 for

24-bit color (includes card)

2644 Patton Road, Roseville, Minn. 55113

Phone (612) 633-4450 or (800) 654-5294;

fax (612) 633-3136

MITSUBISHI ELECTRONICS AMERICA INC.,  
INFORMATION SYSTEMS DIVISION**Diamond Pro 20 Color Monitor:** \$2,999; **Dia-****mond Pro 26M Color Monitor:** \$9,999; **Diamond****Pro 26H Color Monitor:** \$12,999; **Diamond Scan****33 Direct View Color Monitor:** \$4,999; **Diamond****Scan 37 Direct View Color Monitor:** \$6,999; **Dia-****mond Pro 37 Direct View Color Monitor:** \$9,999

5665 Plaza Drive, P.O. Box 6007, Cypress,

Calif. 90630

Phone (714) 236-6352 or (800) 843-2515;

fax (714) 236-6176

NEC TECHNOLOGIES INC.

**NEC MultiSync 6FG:** \$2,455

1255 Michael Drive, Wood Dale, Ill. 60191

Phone (708) 860-9500 or (800) 388-8888;

fax (800) 366-0476

NUTMEG SYSTEMS

**Nutmeg 19:** \$1,280; **Nutmeg 19G:** \$1,799**Nutmeg 19C:** \$3,149 (all include cards)

25 South Ave., New Canaan, Conn. 06840

Phone (203) 966-3226 or (800) 777-8439;

fax (203) 966-7972

RADIUS INC.

**Radius IntelliColor Display/20:** \$3,199;**Radius PrecisionColor Display/20:** \$2,859;**Radius PrecisionColor Display/19:** \$2,499;**Radius Two Page Display/21:** \$1,399;**Radius Two Page Display/19:** \$1,099

1710 Fortune Drive, San Jose, Calif. 95131

Phone (408) 434-1010 or (800) 227-2795;

fax (800) 966-7360

RASTEROPS CORP.

**RasterOps CorrectColor/20T:** \$3,999;**RasterOps 21-Inch Color Display:** \$2,999;**RasterOps/20T Multiscan Color Display:**\$2,499; **RasterOps/20 Multimode Color****Display:** \$1,499; **RasterOps 21-Inch****Mono/Gray Scale Display:** \$1,299

2500 Walsh Ave., Santa Clara, Calif. 95051

Phone (408) 562-4200 or (800) 729-2657;

fax (408) 562-4065

SIGMA DESIGNS

**ColorMax 20T:** \$2,499; **ColorMax 20H Display****System:** \$2,999 (includes adapter); **SilverView****Pro:** \$1,299; **MultiMode 120:** \$1,099; **Multi-****Mode 150:** \$1,495; **L-\*View MultiMode:** \$1,099

47900 Bayside Parkway, Fremont, Calif. 94538

Phone (510) 770-0100 or (800) 845-8086;

fax (510) 770-2640

SONY CORP. OF AMERICA

**Trinitron Multiscan Monitor CDM-2036S:**\$2,999.95; **Digital Control Trinitron Monitor****GDM-2038:** \$3,799.95

655 River Oaks Parkway, San Jose, Calif. 95134

Phone (408) 432-0190 or (800) 352-7669;

fax (408) 943-0740

SUPERMAC TECHNOLOGY INC.

**SuperMatch High-Res 20 Trinitron Display:**\$3,999; **SuperMatch 20•T XL:** \$2,849; **Super-****Match 21 Two-Page Color Display:** \$2,999;**SuperMatch 20 Color Display:** \$1,799; **Platinum****21 Two-Page Gray Scale Display:** \$1,199; **Plat-****inum 20 Full-Page Gray Scale Display:** \$1,099

485 Potrero Ave., Sunnyvale, Calif. 94086

Phone (408) 245-2202 or (800) 334-3005;

fax (408) 735-7250

## The Competition

600 dpi

The NewGen  
TurboPS/880p

800 dpi

If 600-dpi laser printers are the "new standard," we're a couple hundred steps ahead of the competition.

With a full 800 x 800 dpi resolution, the TurboPS/880p from NewGen Systems puts out nearly twice the

dots per square inch. And almost

twice the number of gray levels.

Not to mention our proprietary

Image Enhancement Technology

for the best text, line art and

grayscale printing available.

*They're Both Fast, But  
One Is Clearly Better.*

Suddenly, "competitive" products pale in comparison. • But the TurboPS/880p delivers more than great-looking output. You get automatic language and interface switching for easy sharing among Macs and PCs. NewGen's MultiRes™ feature for flexible resolution printing. And a powerful RISC processor to quickly print complex PostScript images and documents. All for a price that's remarkably lower than competitive products. • See the difference for yourself. For free sample output from the TurboPS/880p, or for more information, call us today at 1-800-756-0556.

**INGRAM  
MICRO**

1 (800) 456-8000

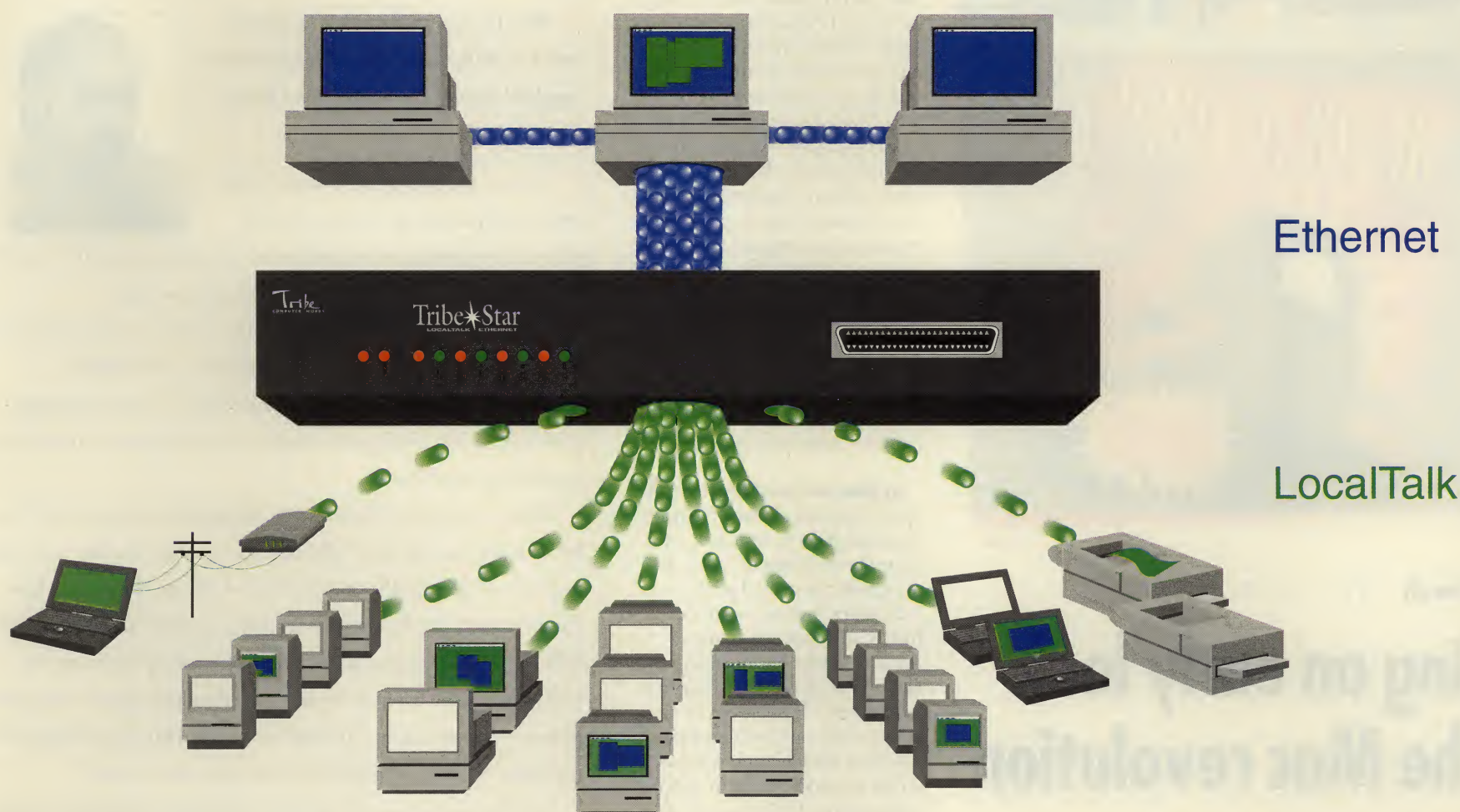
**TJ Tech Data**  
CORPORATION



NewGen Systems Corporation



# The Smartest Way to Migrate From LocalTalk to Ethernet



## Question: What is TribeStar?

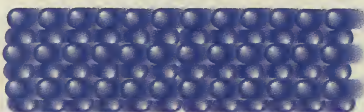
An AppleTalk network hub with eight LocalTalk ports and one Ethernet port. TribeStar™ can handle eight simultaneous full-speed connections between LocalTalk and Ethernet. A router or hub-router combination can only handle one at a time.

## Question: What makes it so smart for Ethernet migration?

Because in one box you get both packet-switched LocalTalk and high-speed Ethernet connectivity. You can mix LocalTalk and Ethernet in the most sensible way—and get eight times the throughput of a router. How does it work? With a router, the packet stream between LocalTalk and Ethernet looks like this:



With five microprocessors and an 80 Mbps backplane, TribeStar builds a roadway between LocalTalk and Ethernet that is eight times wider:



TribeStar can process eight times more packets per second than a router.

# Tribe★Star

LOCALTALK ETHERNET

## Question: How much will TribeStar speed up my LocalTalk?

In a LocalTalk network of 15 to 30 users, it's not unusual to have eight people concurrently accessing Ethernet-based network services. In this case, TribeStar is about four times faster than a hub-router combination. (See graph.)

All Ethernet	12 sec.
TribeStar	22 sec.
Hub+router	85 sec.

*Time to complete eight simultaneous downloads of a 200 KB file from a Macintosh IIsx running AppleShare.*

## Question: Impressive. Where should I use TribeStar?

Use TribeStar whenever you want to integrate LocalTalk and Ethernet. And use it to give LocalTalk users fast access to network services. TribeStar requires virtually no configuration and comes with SwitchMonitor management software. The simplest, most powerful solution, it's a great way to get started with Ethernet.

## Question: How much is it?

TribeStar lists for \$1795. Compare the alternatives:

TribeStar	\$1795
Hub+router	\$3290
All Ethernet	\$8840

*Approximate cost for a 25-node network. All prices are list.*

## Question: Wow. Why should I ever buy a router or a StarController?

Hmmm. Can't think of any reasons.

## Question: OK, must be about time for the phone number.

**510-547-7800**

Call us. We're happy to discuss your network situation. We'll also send further information, including a disk that demonstrates how TribeStar works.



**Tribe**  
COMPUTER WORKS

©1993 Tribe Computer Works, Inc., 1195 Park Avenue, Emeryville, CA 94608. FAX: 510-547-3928. AppleLink: TRIBE. All trademarks or registered trademarks are the property of their respective owners.





CHAD KUBO

MacInTouch RIC FORD

## Taking an early look at the Mac revolution

A major change in processors usually means the end of a computer era, and Apple is about to switch from the venerable 680x0 to the PowerPC. What happens to us?

### ISSUES & TRENDS

**Turn, turn, turn.** The revolution has begun. At the introduction of the Centris line, Apple threw Macintosh prices into turmoil. The IIfx lost one-third of its dollar value just months after its debut, and the Centris 610 shredded the previous relationship between price and performance. The LC III cut into the line well below the cost of the discontinued IIfx with equivalent speed, and used-Mac values are in disarray.

These changes, although dramatic, are only precursors to a much larger economic transformation, which is driving us from today's Macintoshes toward new systems based on the PowerPC. In economic terms, the 680x0 is rapidly becoming obsolete, and the PowerPC is Apple's only hope for

maintaining its ownership of a solid piece of the systems market. With our investments in existing Mac technology, we are in for a tumultuous time in the months ahead.

**Dollars and sense.** Two basic questions help focus the issues: Does the system effectively handle the work you need done, and can you afford its cost?

Right now, the new Mac models are handling normal tasks quickly and effectively at a lower cost (although the savings are offset slightly by extra support costs for System 7.1 and enablers).

We can be reasonably confident Apple will not cut prices again in the next few months, so it makes sense to buy new Macs at the current price levels to run existing applications.

But a year from now, the Power-

PC Macs should be ready. Will prices on 680x0 Macs suddenly drop? As we approach that point, buying decisions get tricky.

PowerPC systems will leave existing Macs behind in raw performance, but PowerPC manufacturing costs should not be much higher. And Apple will have to keep its PowerPC retail prices down to stay competitive with the rest of the market.

But that raw performance is useless unless it can be applied to your own applications. Any emulation mode will carry the penalty of reduced performance, and it's likely to cause some compatibility problems even if Apple does an outstanding job of implementation.

The essential issue is how quickly applications we need will become available and reliable in native PowerPC form and what the conversion costs will be, both in purchase price and in support.

**In Mac we trust?** After developers choose platforms for development and delivery, customers later get to choose platforms based on these applications (and price).

It comes down to a matter of trust. Can developers count on Apple to deliver the tools and markets they need as the Mac migrates to PowerPC? If Apple can do this, we can count on those developers to give us the applications we need on the PowerPC platform. If Apple fails to deliver the developers, the Mac will go the way of the Apple II.

The next event in the revolution is the Apple Worldwide Developers Conference next month. With the changes blowing our way, this is one conference to watch carefully.

### BUGS & TIPS

**Technicolor III.** A new option lets the Mac LC III handle color images at 16 bits of color depth on a standard monitor without even installing optional video RAM.

Tucked away in the LC III manual is a description of a video mode that trades a little screen area for the extra depth, which works far better than eight-bit color with QuickTime video. It also offers much more realism for color photographs.

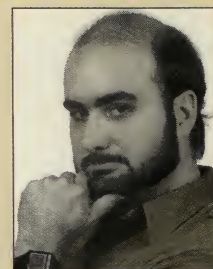
The option is set in the Monitors control panel. It reduces the screen area from the standard 640 by 480 pixels to 640 by 400 pixels (the area of a PowerBook screen). This allows the standard 512 Kbytes of video RAM to support thousands of colors, instead of 256 colors in the normal mode.

**More ROM cleanliness.** In the April 5 column about enabling 32-bit addressing on older Macs, I mentioned reports of problems writing to high-density floppies with accelerators from DayStar

### Ask David Ramsey

## What cannot be found?

**Q.** When I try to paste in a custom icon for my hard disk, the Mac says "The command cannot be completed because it cannot be found." What's that about?



**A.** System 7 handles custom icons in one of two ways depending on whether the icon you're altering belongs to an application (or anything else with a bundle bit, such as a control panel) or a document, folder or disk.

If you paste a custom icon into the Get Info window of an application, the new icon is stored in a part of the application itself called the resource fork. Things such as folders, hard disks and many documents don't have resource forks, so the custom icon information is stored in an invisible file called Icon.

When you customize a folder's icon, the Icon file is created inside the folder; when you customize a disk icon, the Icon file is created at the root (top) level of the disk. After making the Icon file, the Finder sets a Use Custom Icon bit for the file, folder or disk in question. If you delete the Icon file, the Finder gets confused because something has its custom-icon bit set, but there's no Icon file. This is what has happened with your disk; at some previous time, the disk had a custom icon, but the Icon file containing it was erased and this file is what "cannot be found."

The solution is to use a disk utility to copy another Icon file to the root level of your disk. Then you can paste in the new icon you want.

**Q.** I just added 16 Mbytes of memory to my IIfx and now the About This Macintosh window says my system software occupies ... blah, blah, blah.

**A.** I've covered this before, but the recent influx of inexpensive, high-powered Macs has resulted in this question coming up a lot of late.

Open the Memory control panel and turn on 32-Bit Addressing, then restart. If you don't do this, your Mac can't use more than 8 Mbytes of RAM, and any RAM installed over 8 Mbytes is shown as being used by the system software. In reality, however, the extra RAM is not being used at all.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

Digital Inc. of Flowery Branch, Ga.

It turns out that there was a bug in the ROMs of 50-MHz accelerators shipped during a limited period of time. DayStar will update the accelerator free of charge if you have the problem.

DayStar reports that it has found no compatibility problems between Apple's 32-Bit System Enabler and its accelerators, except that some customers have had to reset their parameter RAM to get successful start-ups after installing the enabler. (Note that resetting parameter

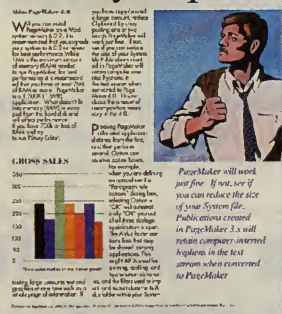
RAM switches the machine back to 24-bit addressing.)

**Timing tweaks.** Sherry London, a system operator on ZiffNet/Mac, reports that some of RasterOps Corp.'s 24STV video boards can run into "timing" problems with the new Centris and Quadra 800 machines. Moving the board to a different slot worked for her, and the company offered to exchange the board. RasterOps is at (801) 226-5265 or (800) 729-2656; fax (801) 226-4010. □



# Why 8 out of 10 professionals choose OmniPage Professional.

## Weekly Report



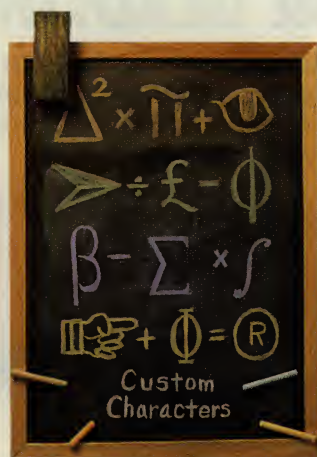
Only *OmniPage* accurately scans words and images up to 256 shades of gray with the Graphic Editor.™



Only *OmniPage* reaches scanning speeds of up to 2000 words per minute with Caere's 32-bit OCR.



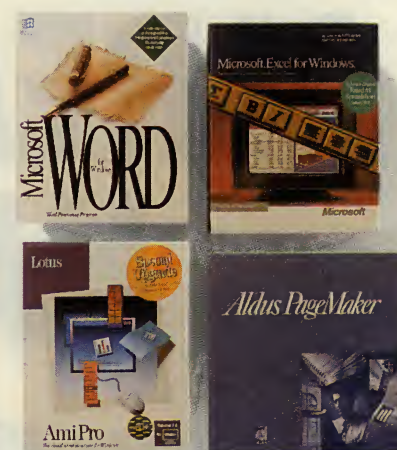
Only *OmniPage* reads 11 different languages, including French (oui!), German (ja!), and Italian (si!).



Only *OmniPage* gets the read on the most unusual characters with OmniTrain.™



Only *OmniPage* features AnyFont, HP AccuPage,™ and Caere AnyPage™ technologies, so it handles any page of text – even when your coffee cup gets in the way.



Only *OmniPage* features direct input through DDE or Apple Events,™ enabling you to scan directly into popular business applications.



When it comes to OCR (optical character recognition), no other product can match the overall performance of *OmniPage* Professional. That's why 8 out of 10 business professionals consistently choose *OmniPage* Professional over all other options. Only *OmniPage*

Professional has the full capabilities to *accurately* scan virtually any document into almost any word processor, spreadsheet, or database file. So you can use *OmniPage* Professional to accurately scan newspaper articles, business reports, journals or legal documents. It's not surprising then that 8 out of 10 scanners in the world have shipped with a

trial version of *OmniPage*, including those from Hewlett-Packard, Epson, Microtek,™ and Apple. Why would they be any different than the rest of us?

For a few more reasons why you should consider *OmniPage* Professional, call us now at **1-800-535-SCAN.**



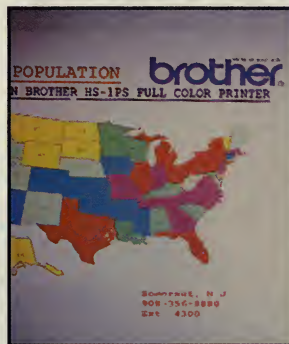
# THE FIRST INK JET COLOR PRINTER THAT USES WHAT YOU ALREADY HAVE!

The Brother  
HS-1PS  
plain paper  
color printer...  
make the  
most of it!



## YOUR PLAIN PAPER

Includes both letter and ledger  
size trays



## YOUR STANDARD TRANSPARENCY STOCK

Built-in transparentizer means excellent  
quality—fast, with no accessories or  
expensive, special stock to buy



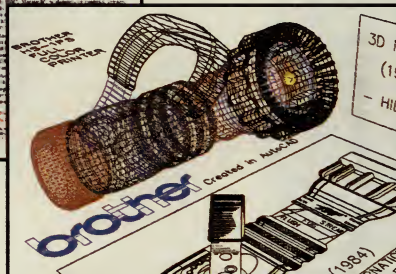
## YOUR COMPUTER

Ready to run with Mac's, PC's &  
workstations—thanks to auto emulation  
and auto interface switching



## YOUR DEADLINES

When you need it yesterday, our  
high-performance 60 MHz. controller  
& high-speed printing system make  
sure you can deliver!



### Model HS-1PS Features:

- Prints via PostScript® language emulation
- HP-GL \*\*® & HP-PCL \*\*® emulations with auto switching
- 10 MB of RAM expandable to 26 MB
- Centronics RS232 & AppleTalk \*\*\* interfaces with auto switching
- 300 DPI resolution
- Accepts paper up to 12" x 20"

\*®Adobe systems, \*\*®Hewlett Packard Company, \*\*\*®Apple Computer

### FREE VIDEO!

Call 908-356-8880  
ext. 4300

for your  
free copy  
of the  
HS-1PS  
video!




We're at your side.

# brother®

BROTHER INTERNATIONAL CORPORATION • 200 Cottontail Lane, Somerset, NJ 08875-6714





# EMBARC<sup>SM</sup>, from Motorola, delivers information to moving targets

## Powerbook<sup>TM</sup> users can roam the nation and stay in the loop

Portability doesn't have to mean isolation from important, timely information, thanks to EMBARC's wireless networking.

In over 200 cities in the U.S. and Canada, users stay connected—to E-mail from the office and news briefs from *USA TODAY*, as well as optional services such as weather, key market and financial developments, and HeadsUP<sup>TM</sup> targeted industry news briefs from INDIVIDUAL Inc. Users can even have their important databases routinely updated—automatically!

All that's required is EMBARC's compact, powerful NewsStream<sup>TM</sup> receiver (it plugs directly into the serial port of the Powerbook) and the simple software package that drives it. It installs in minutes and is ready to operate—without wires, faxes or phones.

Equip your entire team to receive memos, documents and files for pennies per recipient. You'll find EMBARC so cost effective you'll communicate more.

Our corporate trial program lets you try it virtually risk-free. Sign-up right now by phoning **1-800-EMBARC4, Ext. 175**. Give your team the home-field advantage... even when they're on the road.



# EMBARC<sup>SM</sup>

BY MOTOROLA

© Motorola and NewsStream are registered trademarks of Motorola, Inc. All other product and company names are the property of their respective owners. © 1993 Motorola, Inc.



## Big Thes™ pummels the competition!



For sheer, unadulterated word power, nothing beats Big Thesaurus™ 2, the most complete thesaurus for the Macintosh®.

- 100,000 word Merriam-Webster Thesaurus, the world's most popular.
- A whopping 1.4 million referrals of synonyms, antonyms, related, compared and contrasted words plus definitions.
- Organized like you think: by contextual meaning.
- Double-click on any word for instant lookup in most Macintosh applications.
- Low \$99.95 list price.

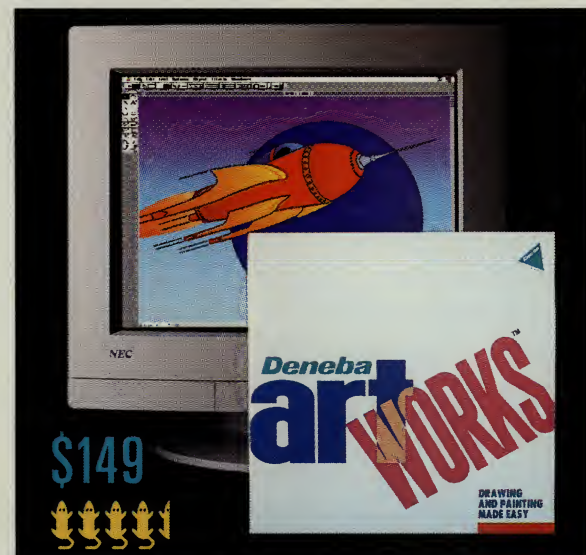
### Deneba Software

7400 Southwest 87th Avenue, Miami, FL 33173  
 (305) 596-5644 Fax: (305) 273-9069

## Thousands steal valuable artWORKS!

They're not committing felonies, they're only committing \$149. For Deneba artWORKS™, the most arresting, easy-to-use, integrated 24-bit drawing, painting and image editing program.

- The flexibility of 3 separate programs, costing hundreds more.
- Hundreds of professional clip-art images.
- Access a complete range of tools and features on any layer at any time.
- "Open Architecture" grows with you.
- For business, home or school.



### Deneba Software

7400 Southwest 87th Avenue,  
 Miami, FL 33173  
 (305) 596-5644 Fax: (305) 273-9069

## Set backups the easy way: File Duo!

With FileDuo™, it's so easy to set an unattended backup, you'll probably do it more often! It's just a matter of clicking a few buttons.

Set FileDuo to backup modified files-only or specific files/folders at a specific time or intervals.

Here's the real bonus: FileDuo backup files need no restoration — they are an exact duplicate of the original.

FileDuo includes many more options — call us now for a FREE demo disk.



### ASD Software, Inc.

4650 Arrow Highway, Ste. E-6  
 Montclair, CA 91763  
 (909) 624-2594 Fax: (909) 624-9574 AppleLink: ASD

## File synchronization for the Mac

PowerMerge makes sure you are always working on the latest version of your files on all your Macs. It identifies where the latest versions of your files are and updates each Mac with the newest files. Select any files, folders, disks, or Macs to maintain and future updating is automatic.

- Automatic synchronization
- Online backup
- Control which files are updated
- Preview before updating
- Conflict notification
- Bidirectional & one direction updating
- System 7 & 6



### Leader Technologies

4590 MacArthur Blvd., Suite 550  
 Newport Beach, CA 92660  
 (800) 922-1787 (714) 757-1787  
 Fax: (714) 757-1777

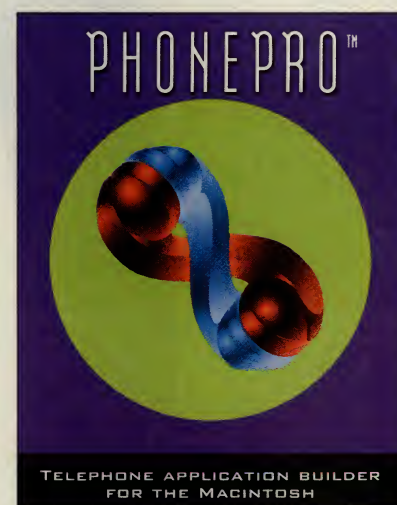
## Have your Mac use the phone

Would you like your Mac to pick up the phone, take messages, forward them to your desktop e-mail, or even make outbound calls?

With PhonePro, the telephone applications builder, it can. PhonePro's easy to use icon-based programming language lets you build virtually any telephone application.

Features:

- Icon-based telephone applications builder
- Customizable ready-to-run applications included
- E-Mail connectivity
- Complete hardware and software system
- MacUser Eddy Award finalist, 4-stars rating in Macworld



### Cypress Research Corporation

240 East Caribbean Drive, Sunnyvale, CA 94089  
 (408) 752-2700 Fax: (408) 752-2735 AppleLink: CYPRESS

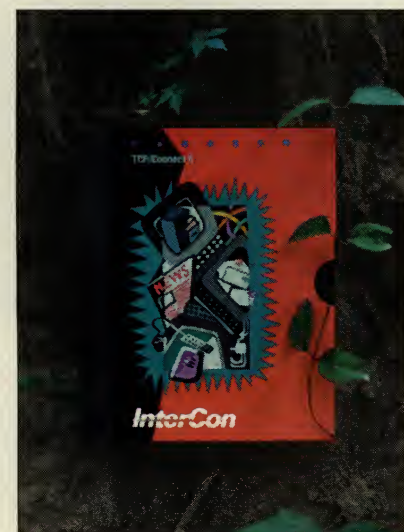
## TCP/Connect II v1.1 delivers more

Use the new TCP/Connect II version 1.1 for standards-based networking:

- DEC, IBM and Tektronix terminal emulation
- FTP file transfer (client and server)
- Electronic Mail
- NNTP news reader for Usenet access
- Finger client and server
- SNMP agent

All reasons that TCP/Connect II leads the industry in TCP/IP services for the Macintosh.

See what you're missing, phone now for a free demo copy.



### InterCon Systems Corporation

950 Herndon Parkway, Herndon, VA 22070  
 (703) 709-5500 Fax: (703) 709-5555



## Turn your Mac into a Quadra 950

"Best Accelerator of the Year", MacUser Magazine Editors' Choice, Jan '93.  
33 Mhz and 25 Mhz 68040 TokaMac® Accelerators for IIx, IIfx, IIsi SE/30, LC.

- Low cost - from \$795.
- Most compatible '040.
- Easy install--PDS slot.
- Fastest 68040 tested.
- Needs no extra SIMMs.
- Shipping since 4/91.
- Upgradeable.
- Software controllable.
- Saves NuBus slots.
- Up to 128k Cache.
- Great for Graphics, DTP.
- Call about II, IIx, IIfx.
- 30 Day M. B. Guarantee
- Purchase factory direct

The TokaMac II FX 33 is fast company for a Mac IIx. Joining Fusion Data's award-winning family of Mac accelerators, the TokaMac II FX 33 outperforms the Quadra 950.



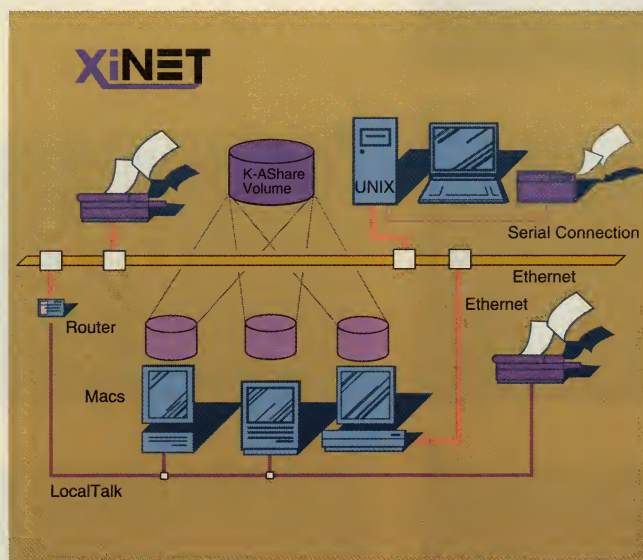
### FUSION DATA SYSTEMS

8920 Business Park Dr., Austin, TX 78759  
(800) 285-8313 ext. 305 Fax: (512) 338-1276

## Integrates Macs with Sun, S.G.I., H.P.

File Server and Network Print Spooling software

- Macintosh computers use a UNIX host as an AppleShare file server.
- Files stored on the UNIX server appear as icons to Macintosh users, allowing users to stay in their familiar environment.
- Macintosh users can access mounted NFS file systems anywhere on the network.
- Macintosh and UNIX users share PostScript printers anywhere on the network without waiting; on LocalTalk, Ethernet or serial connections.
- No additional Macintosh client software needed.



### XINET

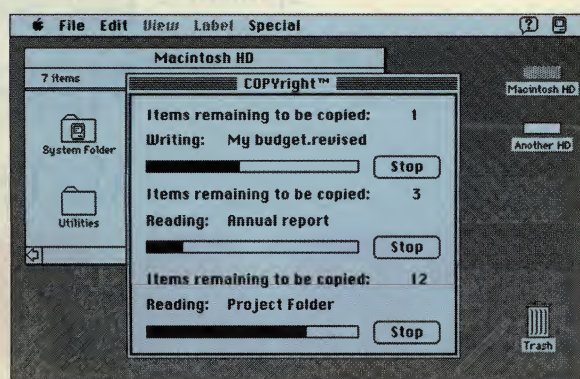
2560 Ninth Street, Suite 312  
Berkeley, CA 94710  
(510) 845-0555 Fax: (510) 644-2680 E-mail xinet@xinet.com

## Finally, the Finder is Free!

COPYright™, a 1992 MacUser Editor's Choice award finalist for "Best Utility," means relief from the wait-while-you-copy blues.

COPYright completely replaces the Finder's copy function allowing you to simultaneously copy multiple files and folders to multiple destinations in the background so you can copy while you work.

COPYright Pro allows you to schedule copies, repeat copies, automatically mount volumes, and filter the files being copied so you can copy while you sleep!



### MSA

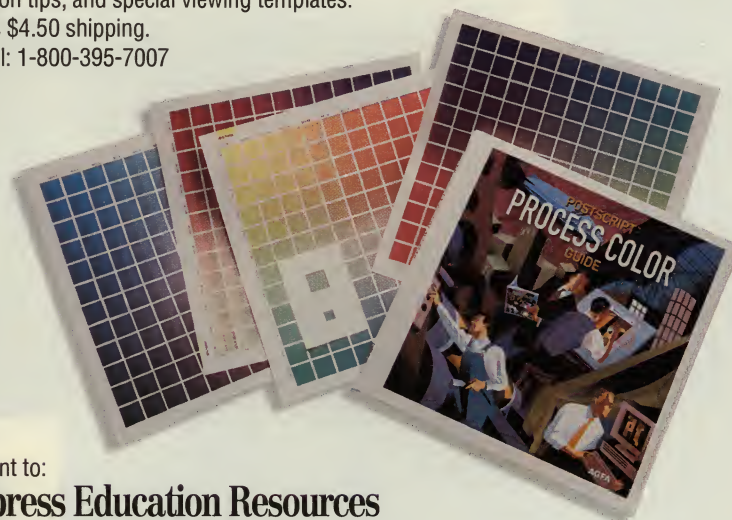
530 William Penn Place, Suite 329  
Pittsburgh, PA, 15219, USA  
(800) 366-4622 (412) 471-7170 Fax: (412) 471-7173 AppleLink: MSA.TECH

## Predictable PostScript process color

The new *PostScript Process Color Guide* from Agfa contains over 17,000 electronically created process color combinations to help you specify colors that you can count on seeing in print. Select a color and then use its CMYK values in your application for output on PostScript imagesetters. This durable 12x12-inch guide includes CMY and CMY+K swatches, coated and uncoated paper sections, useful production tips, and special viewing templates.

\$25.00 plus \$4.50 shipping.

To order call: 1-800-395-7007



Or send payment to:

**Agfa Prepress Education Resources**

P.O. Box 7917 Mt. Prospect, IL 60056-7917

## \$199 PostScript for StyleWriter

With our \$199 UltraScript MacFax PostScript™ compatible interpreter, your StyleWriter or Color DeskWriters can output beautiful typography, graphics — even color proofs. And any Mac or Power-Book modem can receive a PostScript file from anywhere in the world and print a PostScript image. You can even send a PostScript Fax to any of the 20 million fax machines in the world, in essence making them 200 dpi PostScript printers. Call or fax your order now. Credit cards OK.



### PRDS

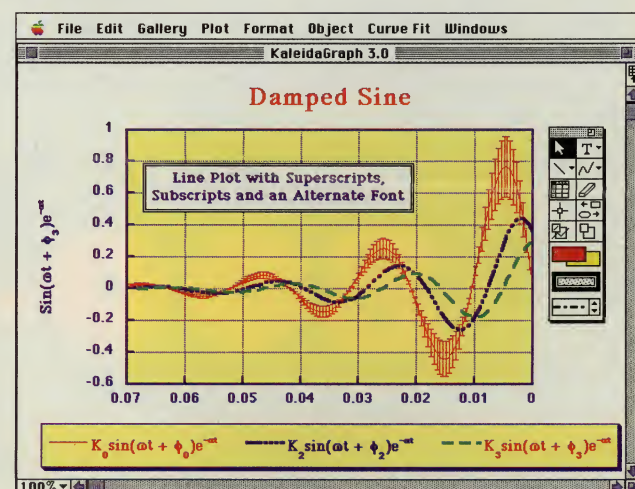
48531 Warm Springs Blvd., Suite 415  
Fremont, CA 94539  
(800) 334-1997 or (510) 226-8930 Fax: (510) 226-8631

## KaleidaGraph v3.0

Now you can import data, analyze data, and generate high resolution scientific and business graphics from one robust, easy-to-use program.

New features:

- Enhanced interface
- Supports Publish, Subscribe and Apple Events
- Import Excel files directly
- 64 colors on an editable palette
- Independent upper and lower error bars
- Store up to 16 user-defined curve fits for use on a single plot
- Extrapolate curve fits to the axis limits
- and much more... for only \$249



### Synergy Software

2457 Perkiomen Avenue, Reading, PA 19606  
Phone: (215) 779-0522 Fax: (215) 370-0548 AppleLink: D2296



**Interactive Training**  
**Interactive Support**  
**Interactive Information**

Ziff Institute's

# Interactive

# '93

Conference

**Interactive Technologies:**

Multimedia Learning Systems  
Computer-Based Training  
On-Line Documentation  
Performance Support Tools  
Interactive Presentations  
Hypertext & Hypermedia Systems  
Distance Learning  
Remote Assistance  
Informational Kiosks  
Interactive Video

**May 3-6, 1993**  
**Anaheim Convention Center**  
**Anaheim, California**  
**Elliott Masie**  
**Conference Director**

**For a  
free  
brochure  
call:**

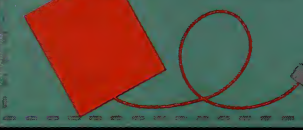
# 800-34-TRAIN

Presented by:

**Ziff** Institute

**Authoring**  
**'93**

**On-Line Doc**



**PERFORMANCE  
SUPPORT**



THE 11TH ANNUAL  
**CBT**  
DIRECTIONS  
CONFERENCE

**tdi**  
Technology  
Delivered  
Instruction  
Forums

Sponsors: **MacWEEK**  
**PCWEEK**  
**MacUser**



**Corporate  
Computing**

Outside the US call 315-354-4092



# The Name You Trust, The Quality You Rely On, At Prices You Won't Believe.



## Genesis 650 Magneto-Optical Drive

650MB of removable, rewritable magneto-optical storage in a half-height size for internal use in Quadras with an average seek time of 40ms, includes 650MB Certified Cartridge.

*MacWEEK* said "The Genesis 650 will drive the per-megabyte cost of optical storage to record lows," *Macworld UK* said Genesis 650 is an "excellent value *with* a two year warranty." Our customers say "Very happy with speed. Setup was a snap."

**\$2199**

**Internal \$2099**  
For use in the Quadra 900 or 950,  
Centris 610 or 650, Ilvi or vx and Performa 600.

**Complete with 25-50 and  
50-50 pin SCSI cables.**

**MICROTECH  
TWO YEAR  
WARRANTY**



## Roadrunner 200i Drive for PowerBooks

Hit the road with 12ms seek, ultra-low power consumption plus *PBTools*, the right brackets for every PowerBook, and Roadrunner formatting software. Memory for your mobile Mac? Bundle up some Coyote memory with your new drive. Recognized as the quality leader, Coyote PowerBook RAM from Microtech features TSOP, pseudoStatic, low power chips, rigid boards and protective mylar shielding. And Coyote RAM for PowerBook 160/180's is always 85ns or faster, FASTRAM enabled.

**FIVE YEAR  
WARRANTY  
ON MEMORY!**

**RR200i  
\$689**

**RR200i Bundle with 6MB  
Coyote 140/170 memory  
\$899**

**RR200i Bundle with 10MB  
Coyote 160/180-10 memory  
\$1049**

**MICROTECH  
TWO YEAR  
WARRANTY**



## Europa Hard Disk Drives

Low on cost, but high on quality, our Europa drives deliver high-speed, high-performance, high-reliability drives with world class mechanisms and all the necessities: Double shielded twisted pair cables and external termination on external models, complete brackets and installation manual on internals. Preformatted, fully tested and ready to run.

EUROPA 500MB	
Fujitsu 2624	Maxtor LXT535
<b>\$1049</b>	<b>\$1139</b>
Internal \$959	Internal \$1049

EUROPA 1GB	
Micropolis 2112	Seagate 11200
<b>\$1629</b>	<b>\$1499</b>
Internal \$1539	Internal \$1409

**MICROTECH  
TWO YEAR  
WARRANTY**

### BUT WAIT, THERE'S MORE

Of course we include the highest quality SCSI cables with external models, complete brackets with internal models, Microtech formatting and driver software — selling a Mac drive without them would be like selling a car without tires.

Microtech goes beyond "Plug & Play" with:

- No nonsense, no extra charge, no worry Microtech Warranty,
- Toll Free, Award-winning Customer Service and Technical Support,
- Rigorous Incoming and Outgoing QC in our own testing labs.

With more than 8 years of quality sales and service to the largest Macintosh corporate installations, Microtech knows how to do it right!

**TO ORDER DIRECT CALL:**

**800.626.4276**

(800 62 MICRO) **FAX: 203.468.6466** ASK ABOUT OUR OTHER PRODUCTS

**Monday - Friday 8AM - 7PM EST • Visa/Master Card**



**MICROTECH**  
INTERNATIONAL, INC.

*Leaders in Mass Storage and Memory Since 1985*



# GET YOUR OWN.

There's nothing quite like having

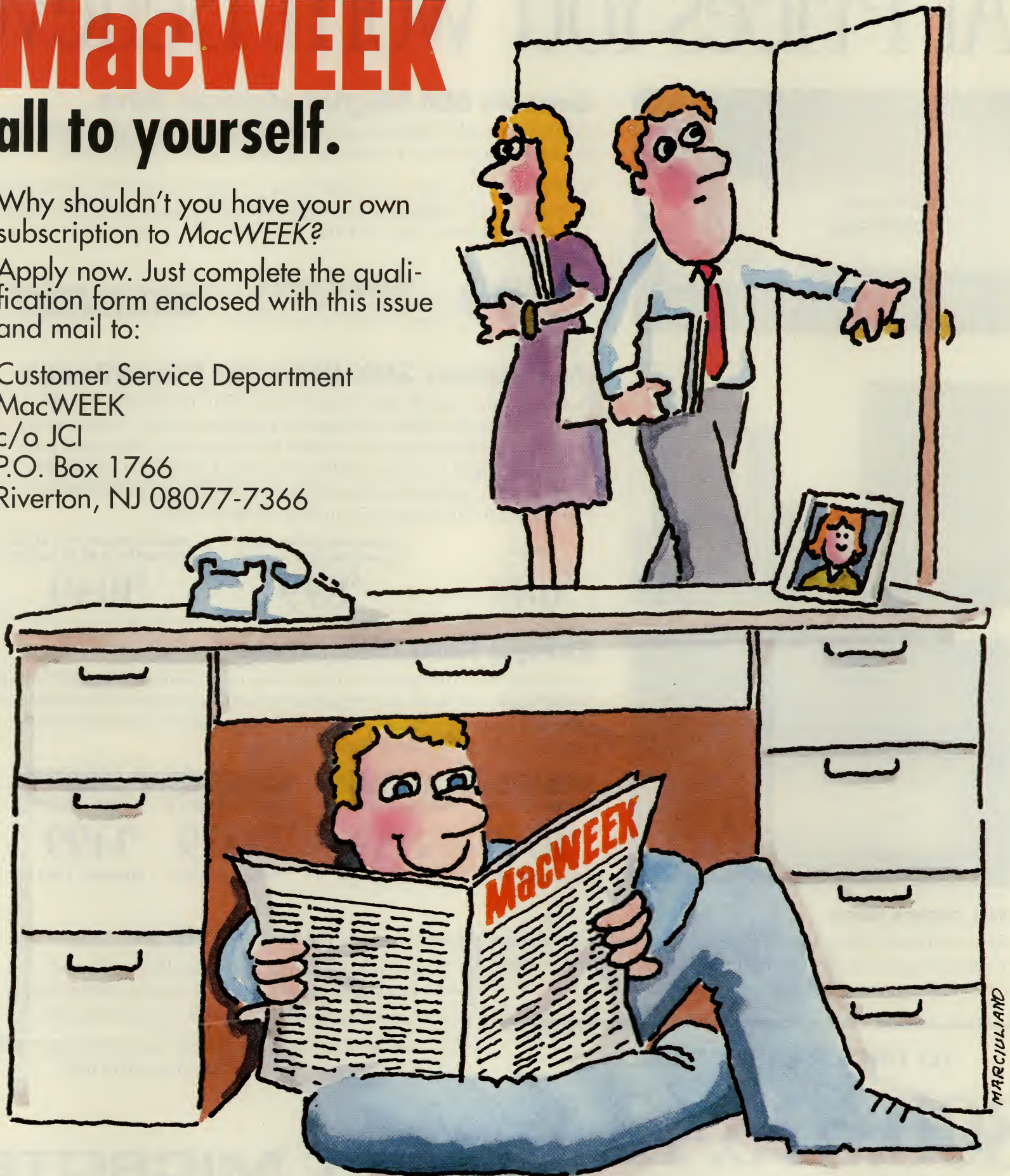
## MacWEEK

all to yourself.

Why shouldn't you have your own subscription to *MacWEEK*?

Apply now. Just complete the qualification form enclosed with this issue and mail to:

Customer Service Department  
MacWEEK  
c/o JCI  
P.O. Box 1766  
Riverton, NJ 08077-7366



Please allow four to six weeks for new subscriptions and changes of address to take effect.



800-846-4622

• 813-886-9534 •

813-881-0634

United States &amp; Canadian Orders

International Orders

Mac and MORE 24 Hour FAX

# Mac and MORE<sub>INC.</sub>

Your Mail Order SuperStore™

**Toll-Free Tech Support**

Mac and More was the first mail-order reseller of Mac systems to give you Toll-Free Tech support. Why? We sell complete solutions—and support them.

**800-945-TECH**

**We Rent and Lease Macs**

Mac and More has competitive prices. Just call us with your system requirements and we'll put together the right package for you.

**800-846-1727**

**Mac and MORE BBS**

Mac and More On-Line is just another way that Mac and More tries to offer more value. Just set your modem for 8-bits, 1-stop bit with no parity.

**813-884-7466**

**Mac and MORE Japan\*\***

Japan  
81(792) 95-2201 fax  
26-1 Okada  
Himeji Japan 670

**81(792) 94-4688**

**Mac Consulting**

Do you have a major installation in the works, or do you just need more advice? Mac and More's consulting services are worth looking into.

**813-886-9534**

**CALL US TODAY!**

**9:00 - 9:00 Mon-Fri**  
**10:00 - 6:00 Sat**  
**or FAX anytime!**

5414 Beaumont Center Boulevard, Suite 210,  
Tampa, Florida 33634 USA

# The competition hates our prices. You're gonna love them!

**With over 2000 products and \$3 million of inventory you will get the best price, fast delivery and the full service Mac and MORE is famous for. It's a deal that can't be beat!**

Why call Mac and MORE? There is a cost to the time you spend shopping. Calling here, calling there . . . trying to figure out the best deal. We agree and in an effort to save you time and money, why not just make ONE call to Mac and MORE.

Most people think that if

they get a low price it will cost them more in the long run because of no support or hidden charges . . . but not with Mac and MORE. For 5 years we have been the leader in providing Macintosh computers and peripherals to the entire world. With our buying

power we can provide you with unbelievable pricing, without sacrificing the support side of the business. For example, all custom configurations are "SNOOPER" tested to make sure everything is perfect when you get it. And to keep it running right, we

offer extended warranties on everything we sell under our Club 24 program. So whether you want to buy, lease or rent why not go for the best of everything with Mac and MORE - YOUR mail order SuperStore.

**CLUB  
24**

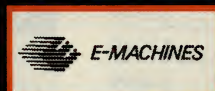
**Everything from Apple and More...**

Apple®



**New Authorizations**  
To provide you with complete solutions.

**digital**  
Authorized Reseller

**Accelerators, Networks and More...****Hard Drives and More...****Video and More...****Printers, Scanners and More...**

ABATON • ABCOM • ACIUS • ADOBE • AGFA • ALDUS • ALYSIS • APPLE • APPLIED ENGINEERING • ASANTÉ • AXION • BDT • CLARIS • COSTAR • CURTIS • DANTZ • DATAPRODUCTS • DAYNA • DAYSTAR • DIGITAL • DOVE • E-MACHINES • EMAC • ENVISIO • EPSON • ETC PERIPHERALS • FARALLON • FUSION • FUJITSU • GCC • GLOBAL VILLAGE • HAYES • HEWLETT-PACKARD • IBM • KENSINGTON • KODAK • MAXA • MAXTOR • MICROSOFT • MICROTEK • NEC • NEWER • NEWGEN • NUVOTECH • PANAMAX • PASTEL • PROMETHEUS • PSI • QMS • QUANTUM • QUARK • RADIUS • RASTEROPS • SEAGATE • SEIKO • SHARP • SHIVA • SIGMA DESIGN • SONY • SUPERMAC • SYMANTEC • SYQUEST • TEXAS INSTRUMENTS • TOSHIBA • UMAX • WACOM

Terms and Conditions: Payment: Mac and MORE accepts Visa, MasterCard, Discover, CODs, and Purchase Orders. We will ship CODs with pre-authorized checks. Corporate and School Purchase Orders are Net-15 for orders over \$1000 only, and are subject to credit approval. Warranties: All warranties on Macintosh or Apple brand products sold by Mac and More will be honored by Mac and More or its authorized agents only. Mac and More does not guarantee compatibility. Like all other Mail-Order resellers, Mac and More is not an authorized Apple reseller. All other manufacturers warranties are honored by Mac and More and the original manufacturer. Returns: All orders returned or refused will be charged a minimum 15% restocking fee. Call for an RTS before returning. Returns must be in original packing with software seals unbroken. Terms, Conditions, and Prices are subject to change without notice or obligation. All products sold by Mac and More are new. We do not sell used equipment. All trademarks are the property of their respective holders. © 1993 Mac and MORE, Inc. All rights reserved. \*\*Prices, Promotions, Hours of Operation, Terms and Conditions may vary for these offices. MACWEEK 4/19/93





# 800 • 436 • 8207

▶▶▶▶▶ TOP PRODUCTS. PRICES AND SERVICE •

◀◀◀ DIRECT SALES & SUPPORT  
INTERNATIONAL  
406 • 256 • 5806  
FAX NUMBER  
406 • 256 • 5816

## Hard Drives

### CONNER

Unformatted Capacity	Access Time	Internal	External
3.5" Disk Drives (2 year Warranty)			
42 mb LPS	17 ms	\$168	\$228
85 mb LPS	17 ms	\$188	\$248
120 mb LPS	12 ms	\$258	\$308
170 mb LPS	12 ms	\$268	\$328
212 mb LPS	9 ms	\$358	\$409
540 mb	8.5 ms	\$868	\$928

### QUANTUM

GO•Drive 2.5" Hard Drive (All Quantums - 2 year Warranty)			
160 mb	17 ms	\$499	\$599
ELS Series (3.5" Low Profile and Low Power Drives)			
85 mb	17 ms	\$199	\$259
127 mb	17 ms	\$255	\$314
170 mb	17 ms	\$279	\$339
LPS Series (3.5" Low Profile and Low Power Drives)			
240 mb	10 ms	\$359	\$419
525 mb	10 ms	\$889	\$955
Prodrive Series (3.5" Half Height Drives)			
1.0 Gig	10 ms	\$1325	\$1385
1.2 Gig	10 ms	\$1479	\$1539

### TOSHIBA

3.5" & 2.5" Disk Drives (2 year Warranty)			
2.5" 213 mb	12 ms	\$548	\$648
3.5" 830 mb	12 ms	\$1029	\$1089
3.5" 1.2 Gig	12 ms	\$1329	\$1389

### FUJITSU

3.5" & 5.25" Disk Drives (5 year Warranty)			
3.5" 520 mb	9 ms	\$788	\$888
3.5" 1.1 Gig	8.5 ms	\$1548	\$1599
5.25" 1.2 Gig	11.5 ms	\$1188	\$1288
5.25" 2.06 Gig	11.5 ms	\$2119	\$2219
5.25" 2.4 Gig	11.5 ms	\$2274	\$2395

### SEAGATE

3.5" Half Height Drives (1 and 5 year Warranties)			
1.2 Gig	10.5 ms	\$1339	\$1399
Wren and Elite Series (5.25" Full Height Drives)			
Wren 7 1.2 Gig	15 ms	\$1199	\$1389
Wren 8 1.6 Gig	15 ms	\$1649	\$1749
Wren 9 2.1 Gig	12.5 ms	\$1858	\$1949
Elite 1 1.6 Gig	11.5 ms	\$1799	\$1899
Elite 2 2.4 Gig	11 ms	\$2499	\$2599
Elite 3 3.4 Gig	11 ms	\$3399	\$3499

## Media

Model	QTY 1	5PK	10PK	Model	QTY 1	5PK	10PK
SyQ44 cart	\$67	\$65	\$63	SyQ 88 cart	\$107	\$104	\$99
128mb OPT	\$42	\$39	\$37	256mb OPT	\$86	\$84	\$79
60mm DAT	\$17	\$14	\$12	90mm DAT	\$19	\$17	\$14

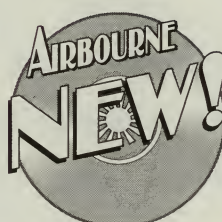
## Modems

### PROMETHEUS

	Price
Ultima Home Office ext 14.4/14.4SR Fax w/ V.42 bis & voice	\$398
Promodem 144i Internal for Powerbook 14.4/14.4SR Fax w/ V.42 & V.42 bis	\$268
Promodem 144e ext 14.4/14.4 SR Fax w/ V.42 & V.42 bis	\$268
Promodem 24e ext 24/96SR Fax w/ V.42 & V.42 bis	\$128
Promodem Mini 2400 2400 BPS mini, data only	\$79

### ZOOM TELEPHONICS

All units come with Microphone LT Software	Price
Faxmodem PBK for Internal Powerbook 96/48 SR Fax w/2400 BPS Modem	\$99
Faxmodem PKT Portable 96/48 SR Fax w/2400 BPS Modem	\$109
Faxmodem FXV V42 bis/MNP5/2400 BPS, 96/96 SR Fax	\$139
Faxmodem VFX V.32 V.32 bis, 14.4 data & fax, V.42 bis/MNP5	\$269



# CD ROMS

## 499.00



**Toshiba 3401 - SCSI II, 200ms  
multisession, DualSpeed, SCSI-II**

## 448.00

**Texel DM-3024 - SCSI II, 265ms  
multisession, DualSpeed, SCSI-II**

### Reference Bundle

- The New Grolier Multimedia Encyclopedia
- World Atlas • Multimedia World Fact Book

## 89.00

### Education Bundle

- MACnificent 7 Education & Games for System 7
- Mayo Clinic • Lessons in American History

## 89.00

### Childrens Bundle

- Interactive Storytime • US Atlas
- Children's Treasury of Stories

## 79.00

### Entertainment & Games Bundle

- Animals - San Diego Zoo • Lucas Game Pack
- Guinness Book of World Records • Sherlock Holmes

## 89.00

### Clip Media & Fonts Bundle

- Font Fun House • Font Pro Vol. 1/The Essentials
- Publish It! 2.0 with Clip Art Fonts • Color it!

## 69.00

## Scanners

### UMAX

Model	All Scanners includes free software	Price
UC630 - Color w/free Photoshop v2.5		\$1078
UC1200s - Color w/free Photoshopv2.5		\$2948
UC840 - Color w/free Photoshop v2.5		\$1248
Transparency Unit		\$698
Auto Document feeder		\$398
UG600 - Greyscale w/free Typereader OCR, OFOTO & Publish It		\$848

## Accelerators

### DAYSTAR DIGITAL

Model	Without FPU	with FPU
33 MHZ Powercache	\$375	\$465
40 MHZ Powercache	\$545	\$635
50 MHZ Powercache	\$714	\$845
Powercache Adapter		\$40
Fast Cache Ilsi	\$279	\$349
Fast Cache Ilici		\$199
Fast Cache Quadra		\$249
Fast Cache Q 950		\$375
33 MHZ Turbo 040		\$1345
Fast Cache Turbo 33-128k		\$335
Charger for Photoshop		\$799

## Optical & DAT Drives

Includes one free disc (1 year Warranty)

128 mb Panasonic Optical	39 ms	\$888
128 mb Epson Optical	29 ms	\$988
256 mb Most Optical	31 ms	\$1648

Unformatted Capacity W/DIO Backup W/Retrosect  
Includes free 90m Tape & DIO Backup or Retrosect software

WangTek 2.1 Gig DAT	\$998	\$1098
WangDat 5.0 Gig DAT	\$1398	\$1498

### SyQuest

UnformattedCapacity	Access Time	Price
Includes one free cartridge (2 year Warranty)		
44 mb External	19 ms	\$378
88 mb External	19 ms	\$478
88C mb External	19 ms	\$578

## Memory

Model	60 NS	70 NS	80 NS	Model	60 NS	70 NS	80 NS
1x8	Call	\$32	Call	2x8	Call	\$62	Call
4x8	Call	\$131	Call	8x8	Call	Call	\$279
16x8 FX	Call	Call	\$549	16x8 Q950	Call	Call	\$515

We carry most Mac Memory, Please Call for prices!

Memory for LCIII, Centris 610, 650

4mb \$131	8mb \$269	16mb \$599
-----------	-----------	------------

Hours: 7:30 - 5:00 Mountain Time • Technical Service and Order Tracking 7:30-5:00 Mountain Time 406-256-5806

• 730 Main Suite 102-556 • Billings, MT 59105 •

Visa, Mastercard, Amex, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software.

Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.



# APS Technologies

## Price Breakthrough!

### APS 128MB Magneto-Optical

### just \$999

Internal for  
Quadras

**\$969**



**P**roven MO technology avoids data integrity problems common to other removable drive systems. Now, transport, store and access multi-megabyte documents on low-cost, high-density MO cartridges with Epson's Magneto Optical Drive system. Epson's MO stores 128MB on durable \$49 diskettes. Carry them in your pocket or send them to your output service—these cartridges can take a beating.

#### Three-pass write assures data security

With the dependable security of a three-pass write, keep copies of scanned artwork, multimedia or large documents for future reference or emergency back up.

#### Easy-access archiving

Based on Epson's OMD-5010 mechanism, this state-of-the-art drive supports an average seek time of 35 milliseconds and sustained read times approaching 700KB per second.

The three-pass write occurs at approximately 250KB per second in a Mac environment, making it among

the fastest 128MB MO units currently shipping.

This Epson MO is fully compatible with all ISO and ANSI specifications, so cartridges can be readily accessed on other-brand MO drives.

In a specially designed external enclosure (with extra cooling for reliable operation), APS's 128MB Epson MO is priced at \$999, including one MO cartridge. An internal version for Mac Quadra 900 or 950 is \$969. Additional cartridges are available at \$49 each—a package of five for \$240 or a package of ten for \$400.

The APS 128MB Epson MO carries a one-year manufacturer's warranty and includes APS's award-winning service and unlimited toll-free technical support. Plus, every APS drive includes Dantz Development's easy-to-use backup software DiskFit Direct, a \$49.95 value.



#### Go ahead and buy it

Move up to this next-generation, transportable storage solution. Call APS to order today!

30-Day  
Money-Back  
Guarantee

Unlimited  
Toll-Free  
Technical  
Support

Disk-For-Disk  
Replacement  
Warranty

Every Drive  
is Tested and  
Approved

Bright,  
Knowledgeable  
Sales  
Associates

\*30-day money-back guarantee • All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.  
• Disk-for-disk replacement warranty • SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years, Maxtor L2, L7 GB and Fujitsu drives are warranted for five years. WREN, Quantum 25" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.  
• Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

\*All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2 MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.  
• Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

M-F 7AM-9PM CST. SAT 10AM-4PM CST.  
Visa/Master Card, Discover, American Express: No Surcharge.  
APS Technologies, 2900 S. 29th Hwy., Independence, MO 64057  
International: 1-816 478-8300. FAX: 1-816 478-4596 (24 Hours).  
Toll Free UK: 0800-897-545. Australia: 0014-800-125-875.

# 1-800 645-5401





Great Prices. Priceless Support!

# APS Technologies Has the Best 200MB Drive Deals

**APS Quantum 240, \$339 or Maxtor 213, \$299**



External Q 240  
**\$419**



**INCLUDED WITH ALL DRIVES**

**A**PS Technologies has the 200MB drive you've been looking for. With the best mix of speed and performance, the APS Q 240 is one of the most popular 200MB drives in history! With a 17ms seek and 1.77MB/sec. transfer rate, the APS Q 240 is the 200MB performance champ. The APS MX 213 is the 200MB value leader. Its 17ms seek and 1.25MB/sec transfer rate make it an unbelievable deal at this price. Both drives have a full two-year warranty and APS Technologies' legendary service and unlimited lifetime toll-free support.

External MX 213  
**\$369**



## APS Quantum

MB	INTL	EXTL
240	\$339	\$419
525	899	979
1225 <sup>5</sup>	1489	1559

<sup>5</sup>5-year warranty

## APS Quantum

ELS Low Profile Drives

MB	INTL	EXTL
85	199	269
127	229	299
170	259	319

## APS Maxtor

MB	INTL	EXTL
120 <sup>2</sup>	\$229	\$309
213 <sup>2</sup>	299	369
340 <sup>2</sup>	569	639
540 <sup>2</sup>	969	1069
1240 <sup>3</sup>	1599	1699

<sup>2</sup>2-year warranty <sup>3</sup>3-year warranty

## APS SCSI Boy \$29



• The Ultimate PowerBook Necessity  
• Rugged Palm-Sized 25-30 PowerBook SCSI Adapter  
• Carry Only One Cable  
• Never Get Caught with the Wrong Cable Again!  
• Dealer Inquiries Welcome

## APS Micropolis

MB	INTL	EXTL
560	\$899	\$999
1.1G	1499	1599
2.0G	2699	2799

Includes 5-year warranty

## APS Quantum

PowerBook Go•Drives

MB	INTL	EXTL
80 <sub>GRS</sub>	\$349	\$499 <sup>†</sup>
120	399	529 <sup>†</sup>
160 <sub>GRS</sub>	549	679 <sup>†</sup>

<sup>†</sup>Battery-powered Companion Case for the PowerBook

## APS Fujitsu

MB	INTL	EXTL
520	\$799	\$899
1.2G 5.25"	1249	1349
1.2G 3.5"	1699	1799
2.0G	2299	2399

Includes 5-year warranty



**APS PowerBook Companion Cases**  
The Perfect Home for Your Original PowerBook Drive

AC only	\$79
AC/DC (Battery-Powered)	169

# APS Technologies



# APS Technologies Has the Fastest DAT Ever

## APS Turbo DAT, \$1499

The APS Compression DAT rated the MacWorld Editor's Choice for high capacity backup. Now, get even better performance with the APS Turbo DAT. Based on Archive's Turbo Python DAT Mechanism, the fastest DAT unit available, the APS Turbo DAT is more than 20% faster than all other DAT units. With a two-year warranty and 80,000 hr MTBF you'll probably never need APS's legendary support.



Internal for  
Quadras  
**\$1399**

30-Day  
Money-Back  
Guarantee

Unlimited  
Toll-Free  
Technical  
Support

Disk-For-Disk  
Replacement  
Warranty

Every Drive  
is Tested and  
Approved

Bright,  
Knowledgeable  
Sales  
Associates

### APS Toshiba

MB	INTL	EXTL
213	\$599	\$729†

†Battery-powered Companion Case for the PowerBook

1.2G	\$1099	\$1199
------	--------	--------



### CD-ROM

340I-EI	\$599	\$649*
---------	-------	--------

Fastest CD-ROM Drive Available

Double Speed, Multi-Session Photo CD Compatible

\*Includes Four-Disc APS CD Bundle

### APS Modems \$69 for PowerBooks

2400 baud (9600 send fax/4800 receive fax)



9600 baud v.32 \$279

14,400 baud v.32 bis \$349

All APS Modems for the PowerBook include a 30-day MBG, comprehensive installation guide, and APS's Communications & Fax software.

### APS SyQuest

Model	INTL	EXTL
SQ555	\$349	\$389
SQ5110	469	489
SQ5110c	569	599

The 5110c reads & writes 44 & 88 carts!  
SyQuest Cartridges 44/88.....\$65/100  
Preformatted Cartridges 44/88.....\$70/105

### APS TEAC

155 MB Tape Back Up	\$499
600 MB Tape Back Up	\$699

All APS Tape Drives Include Retrospect by Dantz

### APS DAT

MB	INTL*	EXTL
APSTurboDAT	\$1399	\$1499
APSDAT	1099	1199

\*Internal models for Quadra 900 & 950  
All APS DAT Drives Include Retrospect by Dantz

### APS 128MB MO

Model	INTL	EXTL
Epson	\$969	\$999

128MB Magneto Optical Drive

\*30-day money-back guarantee \* All drive products carry a 30-day money-back guarantee. Your risk in the transaction is the cost of shipping.  
\*Disk-for-disk replacement warranty \* SyQuest, most Quantum, Maxtor and DAT drives are warranted for two years. Maxtor 1.2, 1.7 GB and Fujitsu drives are warranted for five years. WREN, Quantum 2.5" drives, TEAC drives, all CD-ROMs, MOs and SyQuest carts are warranted for one year. Toshiba 830 is warranted for three years.  
\*Prices and specifications subject to change without notice. Refused orders subject to restocking fee.

\*All our hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh. All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, at least 9.2MB of compacted publicly-distributable software, and APS Technologies' ALLIANCE POWER TOOLS SCSI formatter/hard disk partitioner.  
\*Toll-free technical support as often or for as long as you need. Regular hours are 8 am to 8 pm Monday thru Friday, 10 am to 4 pm Saturday, Central Time.

M-F 7AM-9PM CST. SAT 10AM-4PM CST.  
Visa/Master Card, Discover, American Express: No Surcharge.  
APS Technologies, 2900 S. 29th Hwy., Independence, MO 64057  
International: 1-816-478-8300. FAX: 1-816-478-4596 (24 Hours).  
Toll Free UK: 0800-897-545. Australia: 0014-800-125-875.

# 1-800 645-5401







**NEW!**

- Syquest 105mb drives -  
now in stock!



**Syquest**

All Syquest cartridges are  
bundled with DIVA VideoShop  
- a **\$599 value** -  
**FREE!**  
until 4/30/93

Model	
External SyQuest 44mb (One Cartridge Inc.)	<b>\$385</b>
External SyQuest 88mb (One Cartridge Inc.)	<b>\$485</b>
External SyQuest 88mb C* (One Cartridge Inc.)	<b>\$585</b>
External SyQuest 105mb (One Cartridge Inc.) <b>NEW!</b>	<b>\$745</b>
Internal 44mb SyQuest (for Quadra 900&950)	<b>\$345</b>
Internal 88mb SyQuest (for Quadra 900&950)	<b>\$465</b>
Internal 88mb C SyQuest (for Quadra 900&950)	<b>\$555</b>
External SyQuest Dual 44mb (One Cartridge Inc.)	<b>\$725</b>
External SyQuest Dual 88mb (One Cartridge Inc.)	<b>\$895</b>
External SyQuest Dual 44/88mb (One 44 & One 88 Cartridge)	<b>\$895</b>
External SyQuest Dual 88C mb(One Cartridge Inc.)	<b>\$1075</b>
External SyQuest Dual 44/88C mb(One 44 & One 88 Cartridge)	<b>\$995</b>
SyQuest 44mb Cartridge/10 Pack	<b>\$63/\$620</b>
SyQuest 88mb Cartridge/5 Pack	<b>\$97/\$480</b>
SyQuest 105mb Cartridge	<b>\$79</b>

All SyQuest Drives come with FWB™ HDT Formatting Software. SyQuest carries a TWO year Warranty on Drives and ONE year on Cartridges.  
\*READS AND WRITES 44 AND 88 CARTRIDGES. Does not format 44 cartridges.

**SAME DAY SHIPPING!**

Any order placed by  
3p.m. PDST Monday thru  
Friday will ship that  
same day.

**WE SHIP ON SATURDAYS\***

by Federal Express  
and Airborne.  
\*If order is placed by  
1p.m. PDST.

## Quantum

"An Apple Authorized Brand"

Formatted Capacity	Speed	Size	Internal	External
ELS 42mb	19ms	3.5"TH	<b>\$175</b>	<b>\$235</b>
ELS 85mb	17ms	3.5"TH	<b>\$195</b>	<b>\$255</b>
ELS 127mb	17ms	3.5"TH	<b>\$245</b>	<b>\$305</b>
ELS 170mb	17ms	3.5"TH	<b>\$265</b>	<b>\$325</b>
LPS 105mb	10ms	3.5"TH	<b>\$235</b>	<b>\$295</b>
LPS 240mb	10ms	3.5"TH	<b>\$355</b>	<b>\$415</b>
LPS 525mb	10ms	3.5"TH	<b>\$895</b>	<b>\$955</b>
Pro 700mb	10ms	3.5"HH	<b>\$1185</b>	<b>\$1245</b>
Pro 1.05gb	10ms	3.5"HH	<b>\$1325</b>	<b>\$1385</b>
Pro 1.22gb	10ms	3.5"HH	<b>\$1475</b>	<b>\$1535</b>
*GRS 80mb	16ms	2.5"PB	<b>\$295</b>	<b>\$395</b>
*GO 120mb	16ms	2.5"PB	<b>\$385</b>	<b>\$485</b>
*GRS 160mb	16ms	2.5"PB	<b>\$495</b>	<b>\$595</b>

TWO year Warranty. \*ONE year Warranty on GO drives.  
FWB™ HDT Formatting Software Included.

To Place an Order, Please Call us at this Number:

**(800) 392-5818**

Para Ordenar en Español: (800) 392-5832  
International: (714) 572-5350  
24-Hour FAX Number: (714) 572-5363  
Call Monday-Friday 6AM - 6PM PDST • Sat 9AM - 1PM PDST  
5761 E. La Palma Ave • Suite 182 • Anaheim CA 92807

All CD-ROMs are bundled with  
Kodak Photo-CD Access Software  
- a **\$99 value** -  
**FREE!**

## TOSHIBA

Formatted Capacity	Speed	Size	Internal	External
877mb	12.5ms	3.5"HH	<b>\$1035</b>	<b>\$1095</b>
1.23gb	12.5ms	3.5"HH	<b>\$1335</b>	<b>\$1395</b>
213mb	12ms	2.5"PB	<b>\$545</b>	<b>\$645</b>
600mb <b>NEW!</b>	200ms	3.5"HH	<b>\$495</b>	<b>\$555</b>

**CD-ROM**  
**Dual Speed/Photo-CD/Multisession compatible**  
Toshiba carries a THREE year Warranty on drives. ONE year Warranty on CD Rom. FWB CD Rom Tool Kit Formatting Software Included.

## HARD DRIVES

### FUJITSU

Formatted Capacity	Speed	Size	Internal	External
513mb <b>SPECIAL!</b>	9ms	3.5"HH	<b>\$799</b>	<b>\$859</b>
1.0gb	9ms	3.5"HH	<b>\$1545</b>	<b>\$1605</b>
1.03gb	15ms	5.25"FH	<b>\$1245</b>	<b>\$1345</b>
1.65gb	15ms	5.25"FH	<b>\$2245</b>	<b>\$2345</b>
2.05gb	12ms	5.25"FH	<b>\$2445</b>	<b>\$2545</b>

FIVE year Warranty. FWB™ HDT Formatting Software Included.

### CONNER

"An Apple Authorized Brand"

Formatted Capacity	Speed	Size	Internal	External
82mb	17ms	3.5"TH	<b>\$195</b>	<b>\$255</b>
160mb	13ms	3.5"TH	<b>\$275</b>	<b>\$335</b>
206mb	12ms	3.5"TH	<b>\$365</b>	<b>\$425</b>
515mb	10ms	3.5"HH	<b>\$885</b>	<b>\$945</b>

TWO year Warranty. FWB™ HDT Formatting Software Included.

### MICROPOLIS "Novell Certified"

Formatted Capacity	Speed	Size	Internal	External
698mb	10ms	3.5"HH	<b>\$1235</b>	<b>\$1295</b>
1.05gb	10ms	3.5"HH	<b>\$1335</b>	<b>\$1395</b>
2.1gb	12ms	5.25"FH	<b>\$2695</b>	<b>\$2795</b>

Fast SCSI-2 Drives. FIVE year Warranty.  
FWB™ HDT Formatting Software Included.

### Maxtor

Formatted Capacity	Speed	Size	Internal	External
120mb	15ms	3.5"TH	<b>\$225</b>	<b>\$285</b>
203mb	15ms	3.5"TH	<b>\$325</b>	<b>\$385</b>
325mb	15ms	3.5"HH	<b>\$575</b>	<b>\$635</b>
520mb	9ms	3.5"HH	<b>\$935</b>	<b>\$995</b>
1.15gb	9ms	3.5"HH	<b>\$1495</b>	<b>\$1555</b>
1.0gb	13ms	5.25"FH	<b>\$1255</b>	<b>\$1355</b>
1.43gb	13ms	5.25"FH	<b>\$1555</b>	<b>\$1655</b>

TWO and THREE year Warranty on 3.5" Drives and FIVE Years on 5.25" Drives. FWB™ HDT Formatting Software Included.

## MAGNETO - OPTICAL

### TEAC

Model	Speed	Size	External
128mb	45ms	3.5"HH	<b>\$979</b>
128mb cartridges (Tosoh)			<b>\$39</b>

### RIEGLER

Model	Speed	Size	External
128mb	45ms	3.5"HH	<b>\$1075</b>
650mb	28ms	5.25"FH	<b>\$2345</b>
128mb/650mb Cartridge			<b>\$39/99</b>

### Maxtor

Model	Speed	Size	External
Tahiti IIM	35ms	1.0gb	<b>\$3175</b>
1.0gb Optical Glass Cartridge			<b>\$225</b>

All MO drives come with FWB HDT software, one MO cartridge and have a ONE year Warranty.

## TAPE BACK - UP

### ARCHIVE

Model	External
2.0gb Standard	<b>\$1099</b>
4.0gb - 8.0gb Compression Turbo	<b>\$1499</b>
90m/60m Tape	<b>\$19/\$16</b>

### TEAC

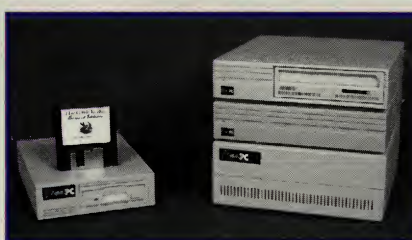
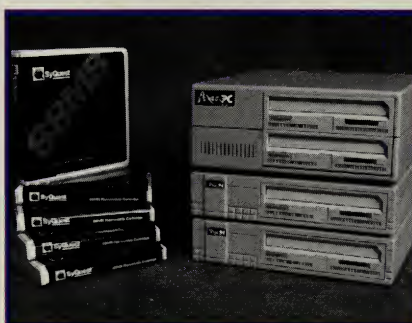
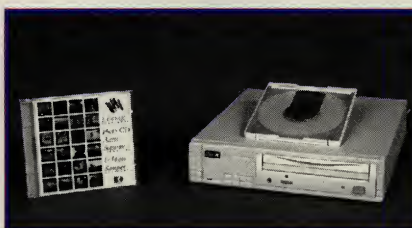
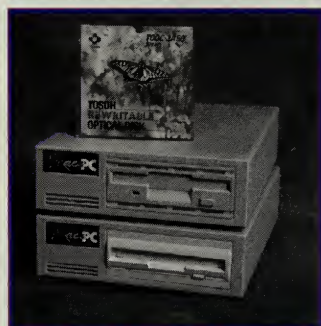
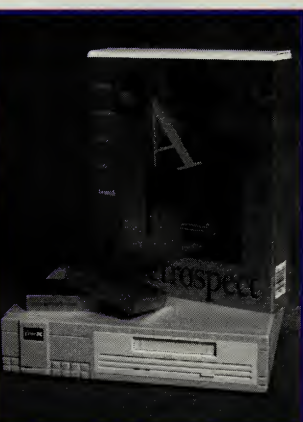
Model	External
150mb Tape Backup Drive	<b>\$469</b>
600mb Tape Backup Drive	<b>\$669</b>
600mb / 150mb Tape Cassette	<b>\$25/\$20</b>

All tape backup drives come bundled with FREE Retrospect V.2.0, one tape and have a ONE year warranty.

### Macintosh Inventory Blowout!

• Iivx 4/80	<b>\$1499</b>
• Iivx 4/230	<b>\$1799</b>
• Iivx 5/80 with CD	<b>\$1999</b>

All Macs are brand new and have a ONE year warranty. Prices good while supplies last.



## MAC SYSTEMS

Duo 210 4/80	<b>\$1759</b>
Duo 230 4/80 - 4/120	<b>\$2199/\$2539</b>
Powerbook 145 4/40 - 4/80	<b>\$2049/\$2389</b>
Powerbook 160 4/40 - 4/80 - 4/120	<b>\$2319/\$2659/\$2999</b>
Powerbook 180 4/80 - 4/120	<b>\$3919/\$4269</b>
Powerbook 165 Color 4/80 - 4/120	<b>\$3239/\$3589</b>
Classic Color 4/80 <b>SPECIAL!</b>	<b>\$1349</b>
LC III 4/80 - 4/160	<b>\$1289/\$1429</b>
IIVX 4/80 - 4/230 - 5/80 w/CD-Rom	<b>\$1499/\$1799/\$1999</b>
Centris 610 4/80 w/o Ethernet	<b>\$1679</b>
Centris 650 4/80 w/o Ethernet	<b>\$2449</b>
Centris 650 8/80 with Ethernet	<b>\$2899</b>
Quadra 950 8/0	<b>\$4669</b>

Quadra 800 8/230 - 8/500	<b>\$4029/\$4669</b>
Apple Adjustable Keyboard	<b>\$215</b>
Apple 14"/16" Color Monitor	<b>\$529/\$1279</b>
StyleWriter II	<b>\$339</b>
Apple LaserWriter Pro 600/630	<b>\$1999/\$2419</b>
Apple Color Printer	<b>\$2239</b>

## POWERBOOK/DUO ACCESSORIES

Powerbooks:	
PowerBook Cables (HDI 30-25 or 50)	<b>\$35</b>
Radius PowerView	<b>\$489</b>
External Battery Recharger for PowerBook	<b>\$149</b>
PowerBook Battery	<b>\$79</b>
PowerPad-Sophisticated Circuits	<b>\$79</b>
Auto Power Adapter/Empire Engineering	<b>\$89</b>
GCC WriteMove II Printer	<b>\$499</b>
AE AxCell (Cellular Phone Interface)	<b>\$270</b>

AE DataLink PB	<b>\$473</b>
AE Powerbook Auto Adapter	<b>\$66</b>
E-Mach PowerLink Presenter	<b>\$479</b>
Duos:	
Duo Floppy Adapter	<b>\$135</b>
HDI-20 Ext. 1.44mb Floppy Drive	<b>\$199</b>
Duo A/C Adapter	<b>\$69</b>
Duo Rechargeable Battery	<b>\$69</b>
Duo Dock	<b>\$975</b>
Apple Mouse II	<b>\$79</b>

Carrying Cases:  
I/O Design Ultimate SL/EX - nylon **\$69/\$79**  
For memory see Macintosh SIMMS section on next page, and for 2.5" drives see Quantum and Toshiba section above.

Mac&PC believes in first-class quality and customer service. As part of our commitment, we offer the following:

- All of our storage drives are pre-tested before shipment, to assure that your product will be in working order.
- Should your product not be perfect, we offer toll-free tech support at 800-392-5818.
- There is no surcharge on any credit card purchase.



# NEC

MultiSync 3FGx - 15" Monitor .....	\$615*
MultiSync 4FG - 15" Monitor .....	\$735*
MultiSync 5FG - 17" Monitor .....	\$1305*
MultiSync 6FG - 21" Monitor .....	\$2355
FG8x 8-bit board .....	\$645
FG24x 24-bit board .....	\$1205
FG24xp 24-bit board .....	\$505
CD-Express .....	\$355
CD-ROM CDR-74 .....	\$625
Multi-Media Gallery .....	\$805
SilentWriter 95F Printer .....	\$1125**
SilentWriter 95FX Printer .....	\$1475**
SilentWriter 97F Printer .....	\$1505**
SilentWriter 97FX Printer .....	\$1815**
ColorMate PS-40 Color Printer .....	\$4399**
2mb upgrade for printers .....	\$95

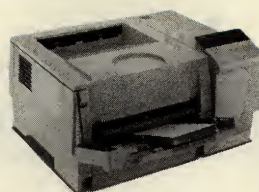


**NEC MultiSync 5FG Monitor**  
 • 17" Multi-Frequency Color Monitor  
 • AccuColor Control System  
 • Up to 1024x768 resolution

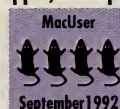


**\$1205\***

\*After \$100.00 Mail-In Rebate with purchase of 24xp Color Display Interface Card and 15" or 17" FG Color Monitor.



**NEC SilentWriter Model 95f Laser Printer**  
 • PostScript Level 2  
 • Envelope feeder and cassette included  
 • 6ppm/300dpi/2mb RAM



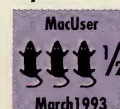
**\$1125\*\***

\*\*After \$250.00 Mail-In Rebate

- Offers end 4/30/93 -



**NEC CDR-74 CD-ROM Reader**  
 • 280ms access time  
 • Photo-CD/Multisession compatible  
 • 2-year warranty



**\$625**

## VIDEO

### RasterOps

21" Mono/Gray-Scale Monitor	\$999
21" Color Hitachi	\$2569
20" Color Trinitron MultiScan RO	\$2349
20" Color Hitachi MultiScan	\$1339
24 STV Interface	\$769
24 SX Interface	\$619
24 XLI Interface	\$1929
Paintboard 24	\$1549
Paintboard LI	\$829
CorrectPrint 300i	\$6999

### radius

PrecisionColor Display/24" Monitor	\$2399
PrecisionColor 19"	\$2099
PrecisionColor Pivot	\$969
PrecisionColor 24XK Interface	\$839
PrecisionColor 24XP Interface	\$499
PrecisionColor 8XJ Interface	\$499
VideoVision (Basic)	\$1679
VideoVision (Presentation)	\$1999
Rockets 25i	\$999
Rockets 33	\$1999
RocketShare	\$419
SCSI-2 Booster	\$249

### SUPERMAC

SuperMatch 21" Color Monitor	\$2499
SuperMatch 17" Color Monitor/Multimode	\$1179
Two-Page 21" Platinum Monitor	\$999
SuperMatch 17T Color Trinitron Monitor	\$1089
Thunderstorm	\$839
Spectrum 24 PDQ Plus	\$1549
Thunder/8	\$1169
Spectrum/8 • 24 PDQ	\$839
Spectrum 24/Series IV	\$839
VideoSpigot Nubus	\$379
Spigot and Sound Pro w/Adobe Premiere v2.0	\$1169
Digital Film w/Adobe Premiere v2.0	\$4799

### SONY

1430 - 14" Color Trinitron	\$669
1320LC - 14" Color Trinitron for LC	\$429
1604S - 16" Color Trinitron	\$1089

Includes MAC Adaptor. Quadra compatible.

### SIGMA DESIGNS

Power Portrait 15" w/anti-glare	\$619
ColorMax 15"	\$739
ColorMax 20H - 20" Hitachi	\$1639
ColorMax 20T - 20" Trinitron	\$2049



## DIGITIZING TABLETS

### Wacom

6x8 Artz	\$309
6x9 Standard Tablet	\$462
12x12 Standard Tablet	\$660
12x12 ElectroStatic Tablet	\$726
12x18 Standard Tablet	\$990
12x18 ElectroStatic Tablet	\$1058

## MACINTOSH SIMMS

1x8/2x8/4x8/16x8 @ 80ns	\$31/\$61/\$125/\$525
Quadra 700/950	
4x8/16x8	\$125/\$525
Powerbook 140/170	
4mb/6mb/8mb	\$159/\$255/\$355
Powerbook 160/180	
4mb/6mb/8mb/10mb	\$195/\$275/\$385/\$445
Duo 210/230	
4mb/6mb/8mb/10mb	\$210/\$299/\$399/\$499
PC 1x9/4x9	\$39/\$139
<b>NEW 32-BIT SIMMS</b>	
4x8/8x8/16x8 @ 70ns - Centris & LCIII	\$129/\$249/\$525
4x8/8x8/16x8 @ 60ns - Quadra 800	\$139/\$279/\$689

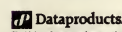
## PRINTERS



WriteMove II	\$499
WritImpact 24-Pin	\$499
PLPII 1mb/4ppm/300dpi	\$799
PLPIIS 1mb/8ppm/300dpi	\$1099
BLPII 2mb/4ppm/300dpi	\$1499
BLPIIS 2mb/8ppm/300dpi	\$1749
BLPIIS 4mb/8ppm/300dpi	\$2179
BLP Elite 2mb/4ppm/300dpi	\$1149
BLP Elite 2mb/8ppm/300dpi	\$1399
WideWriter 360 512k/360dpi	\$1399
SelectPress 600 8mb/8ppm/600dpi	\$3999



Deskwriter	\$409
Deskwriter 550-C	\$769
LaserJet 4M	\$1999



Dataproducts LZR 1560	\$2999
Two Trays: Letter and Legal. 15ppm/300-400dpi	
with 4mb RAM upgradeable to 8mb. Postscript Level 2.	
4mb RAM upgrade	\$349
Toner	\$289



MicroLaser Plus PS-17 with Appletalk	\$1179
MicroLaser Plus PS-35 with Appletalk	\$1299
MicroLaser Turbo with Appletalk	\$1459
AppleTalk Kit	\$49
1mb upgrade for PS-17/PS-35/Turbo	\$49
Toner Cartridge	\$49

## SCANNERS

### UMAX

UC - 1200s with Adobe PhotoShop™ v2.0.1 FV	\$2999
UC - 840 with Adobe PhotoShop™ v2.0.1 FV	\$1299
UC - 630 with Adobe PhotoShop™ v2.0.1 FV	\$1089
UC - 630 with Typereader OCR	\$899
Automatic Document Feeder	\$489
Transparency / Slide Scanner Option	\$699



Arcus 1200dpi Scanner	\$2999
Arcus Transparency option	\$739

## MODEMS

### Robotics

Mac&Fax SPORTSTER Modem 14.4bps, Send/Receive FAX Modem	<b>SUPER SPECIAL!</b>	\$249
WorldPort FAX		\$459

### TWINCOM

24/96 PowerTwin - Internal for Powerbooks	\$131
24/96 Commuter - External	\$136
24/96 FaxNet - External	\$318
14.4 Pro - External	\$340
14.4 MacVoyager - Pocket External	\$374
14.4 FaxNet - External	\$522
14.4 PowerTwin - Internal for Powerbooks	\$568

TWO year warranty.



COMstation One	\$135
COMstation Two	\$235
COMstation Four	\$345
COMstation Five	\$415
PowerModem I	\$125
PowerModem II	\$225
PowerModem III	\$315
PowerModem IV	<b>SUPER SPECIAL!</b> \$375

## NETWORK

### ASANTE

MC3NB - Thick/Thin/10 Base T, 64k	\$199
MC+II64 - Thick/Thin, 64k	\$149
MC+II64 - Thick/10 Base T, 64k	\$149
MC+LCII - Thin/10 Base T, FPU Socket	\$199

We carry the full line of Asante Products.

## ACCELERATORS

### DAYSTAR

Charger	\$809
DualPort IIsi	\$169
Turbo 040 25 MHz	\$1099
Turbo 040 33 MHz	\$1349
FastCache Turbo 25-128k cache	\$259
FastCache Turbo 33-128k cache	\$335
FastCache Quadra (700, 900 & 950) - 128k	\$375
PowerCache 33MHz OR w/ FPU	\$375/\$465
PowerCache 40MHz OR w/ FPU	\$545/\$635
PowerCache 50MHz OR w/ FPU	\$715/\$845
PowerCache Adapters*	\$42

\* Additional on all PowerCache cards except for IIsi



Plus Drive	\$299
3.5 Mac Drive (External 1.44)	\$225
QuadraLink (4 Port Serial for Mac IIs)	\$198
TransWarp LC - 25MHz or w/FPU	\$360/\$415
TransWarp LC - 33MHz or w/FPU	\$405/\$507
TransWarp LC - 40MHz or w/FPU	\$369/\$505
TransWarp SE - 25MHz or 40MHz or 40MHz w/FPU	\$185/249/390
TransWarp Classic - 25MHz or 40MHz or 40MHz w/FPU	\$185/249/390



Mac&PC, USA, welcomes international inquiries. ■ We offer toll-free customer technical support. ■ Fortune 500, educational and government P.O.'s welcomed upon credit approval. ■ Minimum purchase orders of \$500. ■ Mac&PC does not guarantee product compatibility. ■ Prices, terms and availability subject to change without notice. ■ Product names in this advertisement are TM or ® of their respective companies. ■ All returns require an RMA number and are subject to restocking fee. ■ C.O.D., cashiers, company and personal checks accepted upon credit approval. ■ Apple/Macintosh products have a one year warranty only through Mac&PC, USA, Inc. We are not an Apple authorized dealer.

To Place an Order, Please Call Us at this Number:  
**(800) 392-5818**  
 Para Ordenar en Español:  
**(800) 392-5832**



# What Makes Our 11x17 Printer Better Than The Rest?



600 dpi, 800 dpi, 960 dpi, 1200 dpi, Speed, Flexibility, Upgradability and Support... oh yeah, Price.

When shopping for an 11x17 PostScript® compatible printer, we realize you have a lot of choices. And while many vendors lay claim to being the best, Xante prefers to leave the judging to you. We invite you to compare our printer with the rest. With the *Accel-a-Writer 8100*, you'll get...

**11x17/A3 Printing** - The large page size support will give you a new level of flexibility in page layout and printing.

**True High Resolution** - The *Accel-a-Writer 8100* supports true 600 x 600 dpi for incredibly sharp text and graphics. And you have the option to nearly double or triple the resolution with our 800 x 800 dpi and 960 x 960 dpi upgrades.

**High Speed Printing** - The *Accel-a-Writer 8100* is built for speed with the AMD 29000 RISC processor, 12 MB RAM, Xante's *Advanced Memory Management*, and Canon's 8 page per minute LBP®-BX laser print engine.

**Flexibility** - Sharing among Mac® and PC users is simple with simultaneously active AppleTalk®, Parallel and Serial interfaces. You'll get font flexibility with 35 Type 1 fonts plus the ability to download up to 30 more permanently on the controller with Xante's *Virtual Disk Technology*.



**Best Price** - The *Accel-a-Writer 8100* gives the highest quality in output, advanced printing technology and flexibility. But the best thing is you won't have to pay a premium. In fact, the *Accel-a-Writer 8100* is only \$3,995.

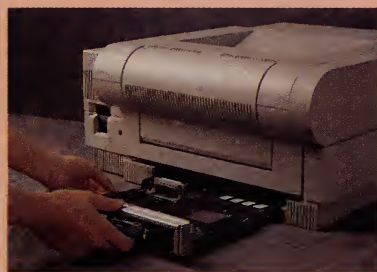
**Quality Assurance Guarantee** - Your purchase will be protected with toll-free customer support, a one year warranty and a 30-day unconditional money back guarantee. Compare, then call us directly.

	Accel-a-Writer™ 8100	CalComp® CCL-600	NewGen® TurboPS 660 B	QMS® 860 Print System
Standard Resolution	600 x 600 dpi	600 x 600 dpi	600 x 600 dpi	600 x 600 dpi
Optional Resolution	800x800, 960x960 & 1200x1200 dpi	None	600 x 1200 dpi	None
Standard RAM	12 MB	4 MB	12 MB	12 MB
Virtual Disk Technology	✶†			
Enhanced Gray Scale	✶✶			
Price	\$3,995	\$3,995	\$5,495	\$4,595

† Optional Statistics as of 3/93

## -Accel-a-Writer™

## Upgrade your LaserWriter to 600 x 600 dpi



The *Accel-a-Writer™* is an upgrade that will turn your existing Apple® LaserWriter® or HP® LaserJet® into a true 600 X 600 dpi, high performance, PostScript® compatible SuperPrinter! You will receive near typeset quality text and line art, advanced grayscale output equal to 850 X 850 dpi, faster processing speeds, SCSI port, simultaneous Mac/PC interfacing, and an installation video - *all at an affordable price.*

	Accel-a-Writer™ Upgrade	LaserWriter® Pro 630	LaserJet® 4M
RISC Processor	✶✶		✓
Virtual Disk Technology	✶✶†		
Enhanced Gray Scale at 600 dpi	✶✶		
SCSI	✶✶	✓	
Price	\$1,195	\$2,529	\$2,399

Leasing available, starting at \$55.<sup>00</sup>/mo

† Optional

Statistics as of 3/93

## 800-926-8839

Ext. 2305  
Fax 205-476-9421

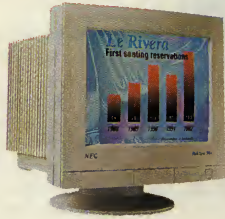


**XANTE**  
Innovations In Output





# USA★FLEX...For Great MAC Peripherals!



## NEC MultiSync® Monitors

All NEC monitors include Tilt/swivel base and are Mac® II/Quadra family compatible (w/cable adapter)

### 3FGx™ 15" Monitor

**\$609**

- 1024 X 768 Non-interlaced @ 60 Hz
- .28mm Trio dot pitch
- 65 MHz max. video bandwidth

DI-NEC3FGX SRP \$799

MAC CABLE PART # F1-MACADP

### 4FG™ 15" Monitor

**\$709**

- 1024 X 768 Non-interlaced @ 70 Hz
- .28mm Trio dot pitch
- 75 MHz max. video bandwidth

DI-NEC4FG SRP \$949

MAC CABLE PART # F1-MACADP

4FG + MacFG™ 8X display interface card

**\$1339**

4FG + MacFG™ 24X display interface card

**\$1899**

### 5FG™ 17" Monitor

**\$1249**

- 1280 x 1024 Non-interlaced @ 74 Hz
- .28mm Trio dot pitch
- 135 MHz max. video bandwidth

DI-NEC5FG SRP \$1599

MAC CABLE PART # 8325FG

5FG + MacFG™ 24X display interface card

**\$2439**

### 6FG™ 21" Monitor

**\$2299**

- 1280 x 1024 Non-interlaced @ 74 Hz
- .28mm Trio dot pitch
- 135 MHz max. video bandwidth

DI-NEC6FG SRP \$2899

MAC CABLE PART # 8325FG

6FG + MacFG™ 24X display interface card

**\$3479**

## SONY

### CPD-1304 14" Multiscan® Trinitron® Color Monitor

**\$569**

- 1024 x 768 Non-interlaced
- .25mm Trio dot pitch
- 50MHz bandwidth (typical)

DI-S1304



### CPD-1604S 17" Multiscan® Trinitron® Color Monitor

**\$1049**

- 1024 x 768 Non-interlaced
- .25mm Trio dot pitch
- 60MHz bandwidth (typical)

DI-S1604 SRP \$1700

MAC ADAPTER TMACSTD \$16.95



### NEC MacFG™ 8X/24X Color Display Interface Card



Combine the MacFG 8X or 24X with a Multi-Sync® FG™ monitor for the ultimate graphics subsystem for your Macintosh computer.

**MacFG 8X**

**\$639**

FG8X SRP \$799

**MacFG 24X**

**\$1199**

FG24X SRP \$1499



## SPECIAL OF THE MONTH

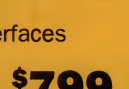
### EPSON

### EPL-7500 POSTSCRIPT™ LASER PRINTER

**Incredible PostScript Price**

The powerful EPL-7500, PC World's "Best Buy" and Info World's #1 PostScript laser printer!

- 6 pages per minute
- Adobe® PostScript with 35 typefaces
- Weitek XL-8200 series RISC processor
- 2MB memory, expandable to 6MB
- Parallel, serial, and AppleTalk® interfaces
- HP LaserJet Series II emulation
- 250 sheets input capacity



**NEW LOW PRICE B1-EPL7500**

### NEC Silentwriter® 95f

**Model 95f Rebate**  
FLEX PRICE **\$1349**  
NEC MAIL-IN REBATE **- \$250**  
YOUR COST AFTER REBATE **\$1099**

- 6 PPM PostScript® Level 2 and PCL 5
- AppleTalk/Parallel/Serial
- Automatic Emulation Switching • 2 MB exp. to 5 MB
- 35 Scalable & 22 HP fonts • Built-in env. feeder B1-NEC95

**Silentwriter 95fx**  
Same as above with built-in plain paper send/receive fax capability B1-NEC95FX  
**Model 95fx Rebate**  
FLEX PRICE **\$1649**  
NEC MAIL-IN REBATE **- \$250**  
YOUR COST AFTER REBATE **\$1399**

Rebate offer ends April 30, 1993

### NEC Intersect™ CD-ROM CDR-37

**\$439**

- Fast 450ms access time
- 150 KB/second data transfer rate
- 64 KB cache memory
- Optional battery pack for portable operation
- 2 year manufacturer's warranty
- Includes MAC interface kit

DI-CDR-37 & CD-MA002

### NEC Intersect™ CD-ROM CDR-74 with MultiSpin™

**\$619**

- 280ms - Fastest Access Time Available
- 300 KB/second data transfer rate
- 64 KB cache memory
- Standard dust brush for added dust protection
- Includes MAC interface kit
- 2 year manufacturer's warranty

DI-CDR-74 & CD-MA002

For our full line of CD-ROM software titles dial  
**FLEXFAX 1-708-351-5419**



### SONY Reconditioned LASER LIBRARY

**\$399**

- External CD-ROM Drive
- <340 ms access time
- 150KB/sec. transfer rate
- 8K buffer
- Built-in audio
- Sony interface card
- Laser Library
- Installation Software
- Laser Library Menu

**Plus 7 Popular Software Titles**  
Including Compton's Family Encyclopedia™, MS Bookshelf™ 1991 Edition, National Geographic Mammals, Mixed-up Mother Goose™, Music Sampler, The Software Toolworks™ World Atlas and Languages of the World

## IBM® Personal Printers for Macintosh® by Lexmark™



**True 600 dpi output...for under \$2000!**

### IBM® LaserPrinter 6A

**\$1529**

- Adobe® PostScript® software built in
- 300 dpi with PQET, Max. 600 dpi w/optional memory
- 10 MHz • 3MB • Up to 6 ppm
- AppleTalk®, Rasterport interface
- 39 Adobe® Type 1 scalable fonts
- 200 sht. paper cass.

4029021 SRP \$2199

### IBM® LaserPrinter 10A

**\$1959**

- Adobe® PostScript® software built in
- 600 dpi with PQET • 16.7 MHz • 5MB
- AppleTalk®, Rasterport interface
- 39 Adobe® Type 1 scalable fonts
- Up to 10 ppm

4029041 SRP \$2799

Printers require MAC cable. Call for price.

**Optional Accessories Available - CALL**

## Dataproducts

### LZR™ 960 Adobe® PS Level 2 Laser Printer

- RISC-based Processor
- 300 dpi • 2MB • 9 PPM
- 35 resident typefaces
- LocalTalk/RS-422, Centronics parallel, RS-232-C serial & SCSI interface

B1-LZR960-001

### LZR 1560 Ledger/A3 Laser Printer

**\$2999**

- 11 x 17" Imaging • Max. 400 dpi res.
- PostScript® Level 2 from Adobe® • 4MB
- 35 resident typefaces • Max 15 PPM

Both printers require MAC cable. Call for price.

B1-1560-002



## Our New Automated Fax Retrieval System

**Information At Your Fingertips, 24 Hours A Day, 7 Days A Week.**

**FLEXFAX (708) 351-5419**

## USA★FLEX TO ORDER: 1-800-678-0354

**USA FLEX FAX # (708) 351-7204**  
**Gov./Education Sales 1-800-695-0249**  
**Gov./Education FAX 1-708-351-9871**  
**Habla Espanol**  
**1-800-723-5500 or (708) 924-6780**  
**Pour les Francophones**  
**1-800-723-2256 or (708) 582-6179**

**ORDER INFORMATION:** Minimum order \$80. Minimum shipping and handling per order \$11.95. MasterCard, Visa and Discover accepted for USA, Canada, APO, FPO and Puerto Rico. FLEXCARD accepted for continental USA only. A \$10 surcharge on credit card orders for APO, FPO and Puerto Rico. C.O.D. order under \$500.00, add \$5.00; over \$500.00, add \$10.00 check warranty charge. Call for special UPS Red/Blue C.O.D. rates. APO/FPO, add 5% to cover additional shipping and handling. Call for PAL rates. **CORPORATE/GOVERNMENT ORDERS:** Corporations rated 1A1 or better and government agencies accepted on Net 30 terms with receipt of a valid purchase order. Leasing Plans available for qualified businesses only. **RETURN PRODUCT INFORMATION:** All returns must have prior authorization from our Customer Service Department (1-708-351-7172). All returns must be in as-shipped condition, with original packaging, including all warranty cards and manuals. Incomplete product returns, unauthorized returns and refused shipments are subject to a minimum 20% restocking charge. We will only accept returns on unopened and non-downloaded software. Software compatibility guaranteed only if we have downloaded it on your new FLEX system. Thirty(30) day money back guarantee applies to FLEX system only (does not include printers or other non-installed peripherals). All prices and specifications subject to change, without notice. Not responsible for typographical or printing errors. All trademarks and registered trademarks are of their respective holders. ©1993 USA FLEX.

**471 Brighton Drive, Bloomingdale, IL 60108**



**Code # MW0426**



# HARDWARE THAT FITS



“ My experience in running large retail organizations for more than 16 years was the person at the top normally heard from customers only when things ‘had not gone according to Hoyle’ somewhere down the line. I would like to be the exception and bring to your attention my experiences of outstanding service from two of your employees during my recent purchase of a RealTech 19" monitor and RasterOps 24XLi card...their responsive service was a refreshing change.”

— Stephen E. Snider



\* E-Machines 16" Color (ColorPage T16)



\* SuperMatch 20" T Multi-Mode XL



## Monitors: all sizes, brands & prices

Need help choosing a monitor? Not sure if you need one that auto-syncs? Call our friendly sales team. They're happy to answer your questions.

	Price	Tube type	640 x 480	640 x 870	832 x 624	1024 x 768	1152 x 870	Auto-syncing	Anti-glare
A. Radius 21" Color	\$3,069	Hitachi							
NEC 21" 6FG Color	2,429	NEC							
SuperMac 21" Mono/Grayscale	989	—							
B. SuperMac 20" (SuperMatch)	\$1,499	Hitachi							
C. <b>NEW!</b> RasterOps 20" Trinitron Multi-Mode	2,359	Trinitron							
* RealTech 20" Trinitron Multi-Mode	1,895	Trinitron							
<b>NEW!</b> Radius IntelliColor 20"	2,759	Trinitron							
RasterOps 20" Hitachi Color	1,199	Hitachi							
* <b>NEW!</b> SuperMatch 20" T Multi-Mode XL	2,699	Trinitron							
E-Machines 19" Color (T19 II)	2,399	Trinitron							
D. Mitsubishi 17" Diamond Pro	\$1,199	Trinitron							
E. NEC 17" 5FG Color	1,329	NEC							
F. Seiko Instruments 17" CM1760LR	1,249	Trinitron							
G. Sony 17"	1,149	Trinitron							
H. RealTech 17" Multi-Mode	995	Hitachi							
I. RasterOps 16" (RasterOps Sweet 16)	\$1,959	Panasonic							
* E-Machines 16" Color (ColorPage T16)	1,299	Trinitron							
J. NEC 15" 4FG Color	789	NEC							
K. Radius 15" Precision Color Pivot	\$959	Non-Trinitron							
L. Sigma 15" Grayscale (PageView GS)	579	Phillips							
M. RealTech 15" Grayscale	449	—							
Sigma 15" Grayscale (Power Portrait)	659	Phillips							
NEC 15" 3FGX Color	669	NEC							
N. Seiko Instruments 14" Color (CM1445)	\$499	Trinitron							
O. Sony 13" Color	689	Trinitron							

\* shown above

Don't know which card is compatible with your CPU & monitor? Call us toll-free.

	Price	Maximum resolution	Accelerated
<b>RASTEROPS</b>			
ProColor 32	\$3,099	1152 x 870	■
PaintBoard 24	1,559	1152 x 870	■
8XL	469	1152 x 870	■
PaintBoard Li (24)	829	1024 x 768	■
24STV*	779	640 x 480	■
MediaTime*	1,549	640 x 480	■
<b>SUPERMAC</b>			
Spectrum/24 PDQ Plus	\$1,549	1152 x 870	■
Spectrum/8 LCII, IIsi	499	1152 x 870	■
Spectrum/8 NuBus	419	1024 x 768	■
Spectrum/24 Series IV	829	1024 x 768	■
Spectrum/8 • 24 PDQ	829	640 x 480	■
Spectrum/8 • 24	579	640 x 480	■
Video Spigot*	369	160 x 120	■
Video Spigot & Sound*	479	160 x 120	■
<b>RADIUS</b>			
Precision Color 24X	\$1,649	1152 x 882	■
Precision Color 8XJ	499	1152 x 882	■
Precision Color 24XK	829	1024 x 768	■
Precision Color 24XP	499	832 x 624	■
Video Vision*	1,979	640 x 480	■
<b>E-MACHINES</b>			
ColorLink DC/T (8-bit with Ethernet)	\$519	1024 x 768	■
ColorLink SX/2 (24-bit with Ethernet)	649	1024 x 768	■
Futura SX24	499	1024 x 768	■
DoubleColor LX (8)	699	1152 x 870	■

\*24-bit; captures up to 30 frames per second

### Wacom Cordless Digitizing Tablets

**\$489**

Lease: \$60/mo.

Cordless, pressure sensitive stylus translates your pen-strokes into line width, spray density, color changes, and other programmable effects. Paint, draw, trace, and point as naturally as if you were writing. The standard tablet has a plain surface. The electrostatic tablet is ideal for video graphics, photo retouching, and print pre-press work.

### Wacom ArtZ Graphics Tablet

6" x 8" High Speed ADB **\$319**

### Wacom (SD Series)

6" x 9" Standard ..... **\$489**  
 12" x 12" Standard ..... **689**  
 12" x 12" Electrostatic ..... **759**  
 12" x 18" Standard ..... **1029**  
 12" x 18" Electrostatic ..... **1099**

# Your one-stop source for Mac solutions.



# Hard drives

**Maxtor®****MICROPOLIS****CONNER****FUJITSU****hp** HEWLETT  
PACKARD**MAXOPTIX****Quantum****Seagate****TOSHIBA**

## YOU'VE BEEN BUYING FROM US SINCE 1985.

To a lot of you, we've become a trusted business partner. So when you told us we needed to offer you more storage options, we listened.

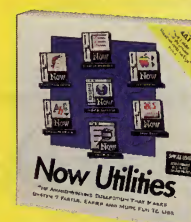
Our systems engineers have worked tirelessly to design the best possible enclosure for name-brand mechanisms.

The result? These drives are the value you've been looking for—priced right, and built with the quality your irreplaceable data demands.

During the past eight years, we've become America's one-stop source for Macintosh solutions. Now we can be your one-stop source for storage solutions, too. Because we're the company you can trust to give you the very best...

### ■ QUALITY ■ SERVICE ■ VALUE

Stack up our drives against the "best of the best" and they'll come out on top. You can trust us to always bring you the highest-quality Mac hardware!



## Limited time offer! Included **FREE** with your drive...award- winning Now Utilities (Version 4.0.1).

Includes 7 powerful utilities: Startup Manager, Super Boomerang, WYSIWYG Menus, Now Profile, and much more. Use Now Utilities to maximize System 7's capabilities, and to simplify using your Mac.

## Name-brand mechanisms in the highest-quality enclosure available

### WHY OUR DRIVES ARE SUPERIOR

- Fast access times
- optimum MTBF
- top-level warranties on all mechanisms
- 2-year warranty on enclosure
- and...

- A. We use the highest quality name-brand mechanisms available; fully tested and burned in
- B. Shielded 40 watt power supply (65 watt for FH drives) keeps the drive free of interference, your data free of corruption
- C. External fuse keeps fuse replacement simple
- D. Power cable plug-in
- E. Two switched outlets provide power to additional peripherals, allowing 1-step system power-up
- F. Easy-to-use pushbutton SCSI I.D. selector switch
- G. Two 50-pin SCSI connectors for simple configuration
- (Not shown) Premium double-shielded 26-inch Mac-to-SCSI cable prevents electronic interference

Thermally-engineered ventilation maintains optimum airflow, cools internal mechanisms; quiet cooling fan. Universal power supply (90-260 volts).

Do you need a fixed hard drive, or the flexibility of a floptical? Call us; we can explain your options.

	Model number	Price (Internal)	Price (External)	Formatted Mac capacity	Avg. access time	Transfer rate*	MTBF** (hours)	Form factor	Warranty (years)
<b>40 - 120 Mb</b>									
Conner 85	CP-30080E	\$209	\$279	82 Mb	17 ms	1.5	150,000	3.5 LP	1
Quantum 85 ELS	ELS85	209	279	82 Mb	17 ms	1.4	250,000	3.5 LP	2
Conner 120	CP-30100	279	349	116 Mb	17 ms	1.5	150,000	3.5 LP	1
Maxtor 120	7120XT	239	309	121 Mb	15 ms	1.5	150,000	3.5 LP	2
<b>120 - 250 Mb</b>									
Quantum 127	ELS127	\$279	\$349	124 Mb	17 ms	1.4	250,000	3.5 LP	2
Conner 170	CP-30170E	289	359	160 Mb	9 ms	1.5	150,000	3.5 LP	1
Quantum 170 ELS	ELS170	299	369	160 Mb	17 ms	1.4	250,000	3.5 LP	2
Conner 212	CP-30200	369	439	206 Mb	12 ms	2.5 <sup>1</sup>	150,000	3.5 LP	1
Maxtor 213	7213	329	399	207 Mb	15 ms	2.8	150,000	3.5 LP	2
Quantum 240	LPS240	389	459	234 Mb	10 ms	1.4	250,000	3.5 LP	2
Maxtor 245	7245	359	429	246 Mb	15 ms	3.0	150,000	3.5 LP	2
Seagate 248	ST3283N	519	589	235 Mb	12 ms	3.0 <sup>2</sup>	250,000	3.5 LP	1
<b>320 - 570 Mb</b>									
Maxtor 340	LXT-340	\$599	\$669	324 Mb	15 ms	2.1 <sup>1</sup>	150,000	3.5 HH	2
Fujitsu 425	M2623FA	899	969	405 Mb	9 ms	2.7 <sup>1</sup>	200,000	3.5 HH	5
Seagate 426	ST1480N	919	989	426 Mb	14 ms	2.6 <sup>1</sup>	150,000	3.5 HH	1
Fujitsu 520	M2624FA	939	1009	496 Mb	9 ms	2.7 <sup>1</sup>	200,000	3.5 HH	5
Quantum 525 LPS	LPS525	959	1029	500 Mb	10 ms	3.2 <sup>1</sup>	250,000	3.5 LP	2
Seagate 525	ST1581N	1029	1099	525 Mb	14 ms	4.0 <sup>2</sup>	150,000	3.5 HH	1
Maxtor 540	MXT-540	989	1059	546 Mb	9 ms	5.5 <sup>1</sup>	300,000	3.5 HH	2
Conner 540	CP-3540	899	969	515 Mb	12 ms	5.5 <sup>2</sup>	150,000	3.5 HH	1
Micropolis 560	M2105	1069	1139	560 Mb	10 ms	5.0 <sup>1</sup>	300,000	3.5 HH	5
<b>660 Mb - 1.05 Gb</b>									
Seagate 663	ST4766N	\$1119	\$1219	645 Mb	15.5 ms	1.8	150,000	5.25 FH	1
Seagate 676	ST4767N	1519	1619	645 Mb	11.9 ms	3.0 <sup>1</sup>	150,000	5.25 FH	1
HP 677	97556	1469	1569	620 Mb	13.5 ms	2.8 <sup>1</sup>	150,000	5.25 FH	5
Quantum 700	PRO700	1249	1319	700 Mb	10 ms	2.9 <sup>1</sup>	350,000	3.5 HH	2
Toshiba 877	MK-438FB	1099	1169	830 Mb	12.5 ms	3.0 <sup>1</sup>	200,000	3.5 HH	2
Quantum 1050	PRO1050	1419	1489	1000 Mb	10 ms	2.9 <sup>1</sup>	350,000	3.5 HH	2
HP 1050	97558	1649	1749	987 Mb	13.5 ms	2.8 <sup>1</sup>	150,000	5.25 FH	5
Seagate 1050	ST11200N	1649	1719	1000 Mb	10.5 ms	5.1 <sup>2</sup>	200,000	3.5 HH	1
<b>1.1 - 3.6 Gb</b>									
Fujitsu 1.2	M2266	\$1249	\$1349	1079 Mb	14.5 ms	3.0 <sup>1</sup>	200,000	5.25 FH	5
HP 1.2	C2247	1589	1659	1000 Mb	10.5 ms	5.3 <sup>1</sup>	300,000	3.5 HH	5
Micropolis 1.2	M2112	1449	1519	1005 Mb	10 ms	5.0 <sup>1</sup>	300,000	3.5 HH	5
Quantum 1.2	PRO1225	1599	1669	1200 Mb	10 ms	2.9 <sup>1</sup>	350,000	3.5 HH	2
Seagate 1.2	ST41200N	1369	1469	999 Mb	15 ms	3.0 <sup>1</sup>	150,000	5.25 FH	1
Toshiba 1.2	MK-538FB	1399	1469	1200 Mb	12.5 ms	4.0 <sup>1</sup>	200,000	3.5 HH	3
Maxtor 1.24	MXT-1240	1549	1619	1240 Mb	9 ms	4.5 <sup>1</sup>	300,000	3.5 HH	3
Conner 1.3	CP-31370	2059	2129	1030 Mb	10.5 ms	6.0 <sup>1</sup>	250,000	3.5 HH	1
Micropolis 1.5	M1528	2299	2399	1341 Mb	14.5 ms	2.9 <sup>1</sup>	150,000	5.25 FH	5
Micropolis 1.6	M1548	2379	2479	1748 Mb	14 ms	4.8 <sup>1</sup>	150,000	5.25 FH	5
Seagate 1.6	ST41651N	1899	1999	1352 Mb	15 ms	4.0 <sup>2</sup>	150,000	5.25 FH	1
Fujitsu 2.0	M2652	2299	2399	1752 Mb	11 ms	4.8 <sup>2</sup>	200,000	5.25 FH	5
Seagate 2.1	ST42100N	1999	2099	1900 Mb	12.9 ms	3.9 <sup>2</sup>	150,000	5.25 FH	5
Fujitsu 2.4	M2654	2549	2649	2000 Mb	11 ms	4.8 <sup>2</sup>	200,000	5.25 FH	5
Micropolis 2.4	M1924	2649	2749	2100 Mb	11.5 ms	4.8 <sup>2</sup>	250,000	5.25 FH	5
Seagate 2.4	ST42400N	2879	2979	2050 Mb	11 ms	4.5 <sup>2</sup>	150,000	5.25 FH	5
HP 2.4	C3010	2899	2999	2000 Mb	11.5 ms	5.3 <sup>2</sup>	300,000	5.25 FH	5
Seagate 3.4	ST43400N	3999	4099	2750 Mb	11 ms	6.0 <sup>2</sup>	200,000	5.25 FH	5
Micropolis 3.6	M1936	4199	4299	3022 Mb	12 ms	6.0 <sup>2</sup>	250,000	5.25 FH	5

\* Transfer rate (or throughput) depends on your Mac CPU and system configuration. For more information, ask your hardware dealer that fits sales partner. \*\*MTBF=Mean Time Between Failure LP=Low Profile HH=Half Height FH=Full Height

<sup>1</sup> SCSI-2 <sup>2</sup> SCSI-2 Fast These drives are most efficient when used with a Macintosh Quadra 800, 950 or a RealTech SCSI-2 card.

### REMOVABLES\*

#### REALTECH® FLOPTICAL®

21 Mb Drive (w/1 disk).....\$339  
Drive w/Diskette 5-pack.....399

#### REALTECH MAGNETO-OPTICAL

128 Mb Drive (w/1 disk).....\$1069  
Drive w/Diskette 5-pack.....1229

Maxoptix Tahiti II Drive(652/1.0 Gb capacity; 35 ms access time; 1 yr. warranty).....\$3269

#### REALTECH TAPE BACKUP

Includes Retrospect 2.0 backup software.

TEAC 155 Mb Drive.....\$499  
TEAC 600 Mb Drive.....749

#### REALTECH DAT

DDS-DC Drive (2-5 Gb capacity; 1 yr. warranty; includes Retrospect 2.0 backup software).....\$1399

The RealTech DAT Drive uses industry-standard DDS-DC compression on a 90-meter tape. Depending on your data, storage capacities may vary from 4 to 8 Gb.

#### SYQUEST®

44 Mb Drive.....\$389  
88c Mb Drive.....599

\*Includes one disk or tape

### REMOVABLE MEDIA

21 Mb Floptical Diskette.....\$21  
5-pack of Floptical Diskettes.....105  
128 Mb Optical Diskette.....\$49  
5-pack of Optical Diskettes.....209  
652 Mb M-O Cartridge.....99  
1.0 Gb ZCAV M-O Cartridge.....239  
155 Mb TEAC Tape.....\$19  
600 Mb TEAC Tape.....28  
60-meter DAT Tape.....\$13  
90-meter DAT Tape.....16  
44 Mb SyQuest Cartridge.....\$63  
88 Mb SyQuest Cartridge.....97  
90 Mb Bernoulli Cartridge.....\$Call  
150 Mb Bernoulli Cartridge.....Call

### REALTECH DRIVE SOFTWARE

Included with your drive, for efficient operation. Disk partitioning; password protection; diagnostic testing; multiple SCSI-bus support; extensive on-line help; and more. Also included with your drive, System 7.01.

### REALTECH SCSI-2 CARD

Allows all NuBus Macs to communicate with newer, high-performance hard drives at substantially faster transfer rates. Sustained transfer rate of up to 4.4 Mb per second, plus a burst transfer rate of 6 Mb per second (6/10 on a Quadra). Mirroring capabilities.....\$299

# 1-800-364-WEEK



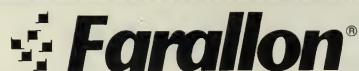
# SYEX EXPRESS




# Monitor

## ONE WEEK ONLY!

### Special Offer



#### PhoneNET® Ethernet Cards

(Mac User )

10BaseT Nubus or SE/30 ..... **\$79**

#### Timbuktu®

(Mac User )

..... only **\$79**  
with any purchase

EtherMac™ II 10T ..... **\$139**

EtherMac LC 10T ..... **\$139**

EtherMac II Thinnet ..... **\$139**

PhoneNET StarController® 12 Port ... **\$799**

PhoneNET StarController EN™ ..... **\$1025**

PhoneNET StarController 24 Port ... **\$1199**

Ether10-T Starlet™ ..... **\$259**

PowerPath ..... **\$69**

LocalPath ..... **\$129**

PhoneNET PC ..... **\$129**

PhoneNET Liaison™ ..... **\$249**

AppleTalk software router for LocalTalk and EtherTalk, and TokenTalk.

Timbuktu/Windows ..... **\$129**

Timbuktu is the easiest way to create a peer-to-peer network. Share peripherals & exchange files quickly & easily.

Complete line of Farallon products available

### More Networking



Thin FriendlyNet® Media Adapter ..... **\$79**

10BASET FriendlyNet Media Adapter ... **\$79**

MacCon+LC ..... **\$149**

MacCon LC/10T ..... **\$149**

MacCon+IIIE64 ..... **\$149**

MacCon+IIET64 ..... **\$149**

MacCon3 NuBus ..... **\$195**

MacCon3 for IIsi ..... **\$195**

MacCon+ 30IE64 ..... **\$149**

MacCon+ 30IET64 ..... **\$149**

EN/SCT 10BaseT SCSI Adapter ..... **\$239**

EN/SC PB 10BaseT for PowerBook ... **\$269**

10T Hub/8 ..... **\$239**

10T Hub/12 ..... **\$479**

Complete line of Asanté products available



Dayna PathFinder ..... **\$769**

SCSI/Link™ ..... **\$279**

SCSI/LinkT PB 10T for PowerBook ... **\$299**

DaynaPORT™ E/II-T ..... **\$149**

DaynaPORT Mini Hub/8 ..... **\$289**

EtherPrint-T ..... **\$329**

EtherPrint™ Plus ..... **\$419**

DaynaPORT E/II ..... **\$149**

DaynaPORT E/LC ..... **\$149**

DaynaPORT E/SI ..... **\$149**

Complete line of Dayna products available

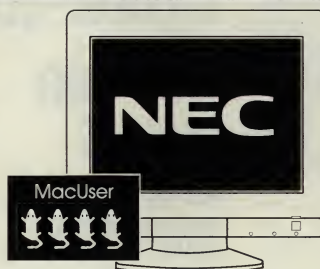
### Monitor Madness! Monitor Madness! Monitor Madness!

## NEC

MultiSync® 6FG™

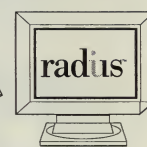
### \$2289

Large 21" screen; great for color business applications. 21" diagonal, .28mm dot pitch; 135MHz bandwidth, 1024 x 768 non-interlaced.




Radius™  
PrecisionColor™  
Pivot® Display

### \$899



15-inch, dual-orientation, anti-glare, color full page display compatible with all Color Pivot interfaces (256 colors) and most Precision Color interfaces. Works with Quadra's built-in video and PowerView™.

### Other Monitors and Graphics Cards

MultiSync 3FGx™ (MacUser ) ..... **\$599**

15", .28mm dot pitch, 65Mhz, 1024x768 non-interlaced

MultiSync 4FG™ (MacUser ) ..... **\$719**

15", .28mm dot pitch, 75Mhz, 1024x768 non-interlaced

MultiSync 5FG ..... **\$1249**

17", .28mm dot pitch, 135MHz, 1024x768 non-interlaced

### \$100 Rebate

Get a \$100 rebate from NEC when you purchase a MacFG 24Xp card with either a 15" or 17" MultiSync FG monitor. Offer ends June 30, 1993.

NEC MacFG24xp card ..... **\$549**

24-bit color NuBus card with QuickDraw acceleration

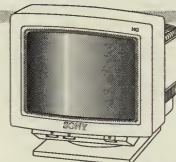
NEC MacFG8x card ..... **\$639**

8-bit color NuBus card with QuickDraw™ acceleration

NEC MacFG24x card ..... **\$1199**

24-bit color NuBus card with QuickDraw acceleration

## SONY



Sony CPD-1304S

14" Trinitron®, Super Fine Pitch, .25mm

aperture grille pitch, 1024x768 max. resolution. .... **\$569**

Sony CPD-1604S

17" Trinitron Multiscan®, Super Fine Pitch, .25mm aperture

grille pitch, 1024x768 max. resolution. .... **\$1049**

### Storage Devices

## SONY

128MB Magneto Optical  
Disk Drive

RMO-S350 3.5" with Mac kit ..... **\$1489**

Sony 650MB Magneto Optical Disk Drive

RMO-S550 5.25" with Mac kit ..... **\$2429**

128MB Optical Cartridge. .... **\$59**

650MB Optical Cartridge. .... **\$139**

## NEC CD-ROM Drives

CDR-25 Express™ Bundle ..... **\$399**

CDR-25 with 1 pair amplified stereo speakers, stereo headphones, and 10 new CD titles.

CDR-74-1 Kodak compatible, multi-spin ..... **\$599**

CDR-74 with CD Gallery ..... **\$799**

CDR-74 with CD Gallery includes 1 pair amplified stereo speakers, headphones, and 6 CD titles.

### Removable Cartridges



SyQuest®

45MB. .... **\$65**

88MB. .... **\$105**

## radius™

**1-year on-site warranty  
on all Radius Products!**

Radius Color Display/21™ ..... **\$2199**

21-inch color display for Macintosh (NuBus™) computers. Displays two facing pages in a resolution of 1152x870 at 75 Hz and 78 dpi. Also supports 1072x810 for WYSIWYG (72 dpi) display.

Radius Two Page Display/19 monochrome ..... **\$849**

19-inch, landscape, Two Page display display for Mac and PC computers. Mac resolution is 1152x 882 at 71Hz at 82 dpi.

Radius Two Page Display/21 monochrome.. **\$1149**

Radius PrecisionColor Display/20S ..... **\$2329**

20-inch multi-frequency Trinitron® color display for Macintosh and PC computers. "On-the-fly" resolution switching. Comes with PrecisionColor software bundle.

### Radius Graphics Cards & Interfaces

Color Pivot Interfaces (NuBus, IIsi, LC, SE/30) ..... **\$499**

Two Page Display interface (NuBus, IIsi, SE/30) ..... **\$379**

UniversalColor 24XP Card ..... **\$499**

UniversalColor 24XK Card ..... **\$799**

PrecisionColor 8XJ Card ..... **\$489**

PrecisionColor 24X Card ..... **\$1629**

PrecisionColor 24XP Card ..... **\$489**

VideoVision™ ..... **\$1919**

Other Radius products available, call.

### Scanners

## UMAX®



UMAX UC-630. .... **\$1075**

600 dpi color scanner with PhotoShop®

Transparency/Slide Adapter for UC-630 ..... **\$699**

UMAX UC-840. .... **\$1299**

800 dpi color scanner with PhotoShop®

### Accelerators

## DAYSTAR

33 MHz Turbo 040 ..... **\$1349**

FastCache Turbo 33 ..... **\$349**

50 MHz PowerCache

with 68882 ..... **\$849**

PowerCache Adapters ..... **\$40**

FastCache Quadra - 700, 900, 950 (128K) ..... **\$399**

## radius™

Radius Rocket 25i™ ..... **\$969**

Radius Rocket 33™ ..... **\$1979**

# 1-800-BUY-SYEX

1 - 8 0 0 - 2 8 9 - 7 9 3 9

Corporate POs Accepted



International & Canadian Orders

fax to (713) 956-5741

or call (713) 957-1999

MacWeek 4/26/93



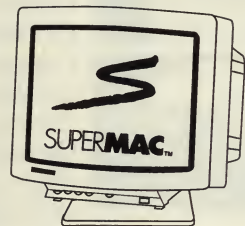
# Madness

1-800-BUY-SYEX

PRICES GOOD THROUGH 5/1/93

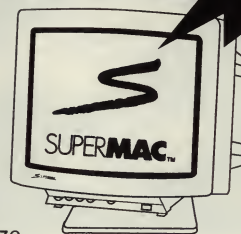
Monitor Madness! Monitor Madness! Monitor Madness!

**SuperMatch 20"**  
Color Display  
**\$1399**



Best buy for large screen color publishing! Its 1024x768 resolution at 72dpi means that you can design full-page projects and still have room left over. It offers precision circuitry for tight corner focus and color purity.

**SuperMatch 20-TXL**  
MultiMode Trinitron Color  
**\$2299**



Mac & PC compatible. It includes 9 factory preset & 16 user-definable display modes, to sync to practically any system or graphics card. Its 1024x768 resolution & 20" size make it perfect fit for color publishing or general business.

Mac IICI  
Cache Card  
**\$49**  
only  
with any purchase



## Keyboards

**NEW!** **Suntouch Mac**  
**Extended Keyboard** ..... **\$89**  
105-key enhanced keyboard layout featuring 15 function keys, separate numeric pad & cursor keypad, extra-large RETURN key, ergonomically angled, 1 year warranty.

## Modems

**SupraFAXModem™**  
**144PB.** ..... **\$299**  
For PowerBook models 100 through 180. 14,400 bps data and fax transmission.

**Supra FAXModem V.32bis.** ..... **\$349**  
14,400 bps data and send/receive fax transmission. Includes FAXstf™, Microphone™ 1.6 software and cable.

**Supra FAXModem+.** ..... **\$179**

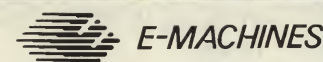
## Global Village Modems

**PowerPort/Gold™.** **\$419**  
14,000 bps data ; 9600 bps fax send/receive

**PowerPort/Silver™.** ..... **\$359**  
9600 bps data ; 9600 bps fax send/receive

**PowerPort/Bronze™.** ..... **\$179**  
2400 bps data; 9600 bps fax send; 4800 bps fax receive

## Docks



**PowerLink™ Presentor.** ..... **\$429**  
Connects Power-Book Duo to large screen displays, televisions, LCDs and projectors.

**PowerLink DeskNet™.** ..... **\$689**  
The only desktop dock with full-speed Ethernet. Choose 10BaseT or Thin Ethernet.

## Memory

**1MB SIMMs** ..... **\$37**  
**2MB SIMMs** ..... **\$69**  
**4MB SIMMs** ..... **\$129**  
**4MB SIMMs for LC III, Centris** ..... **\$149**  
**8MB SIMMs for LC III, Centris** ..... **\$299**  
**16MB SIMMs** ..... **\$529**  
**16MB SIMMs for LC III, Centris** ..... **\$599**

## ExpressNet

**FREE Network Consultation**  
SYEX Express can provide network consultation at no charge. Simply fax your network needs and a list of your systems, including hosts, to SYEX Express (713) 956-5741, and our systems engineers will fax back a networking solution that fits your needs—all at no charge.

## Other Monitors and Graphics Cards

**SuperMac Spectrum/8-24 PDQ™ si** ..... **\$369**  
Fast & versatile graphics card for fast 8-bit color on large displays; 16-bit color on 15", 16", & 17" displays.

**SuperMatch™ 17" Multimode Color** ..... **\$949**  
Mac & PC compatible, works with Quadra motherboard graphics.

**SuperMatch 17-T Trinitron® Color** ..... **\$1049**  
1024x768 full-page. Compatible with Quadra built-in video.

**SuperMatch 20" Color Dual Mode.** ..... **\$2449**  
Flexible viewing, realistic colors for design and publishing

**SuperMatch 21" Two-Page Color** ..... **\$2449**  
Use directly with Quadra on-board video.

## SuperMac Graphics Cards



SuperView™	.....	<b>\$369</b>
Spectrum/8™ si	.....	<b>\$249</b>
VideoSpigot™ si	.....	<b>\$249</b>
Spectrum/8™	.....	<b>\$399</b>
Spectrum/8-24™ PDQ si	.....	<b>\$369</b>
Spectrum/8-24™ PDQ	.....	<b>\$799</b>
Spectrum/24™ Series IV	.....	<b>\$799</b>
Spectrum/24™ PDQ+	.....	<b>\$1489</b>
SuperMac ThunderStorm™	.....	<b>\$799</b>
SuperMac Thunder/24™	.....	<b>\$2275</b>
SuperMac VideoSpigot Pro	.....	<b>\$1039</b>

## Printers and Printer Accessories

**Hurry, Rebates Ends April 30, 1993.**

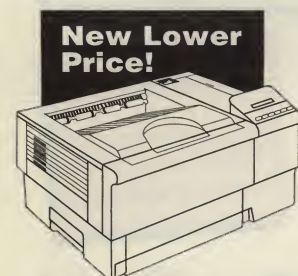
**NEC**

**Silentwriter® Model 95fx**  
with PostScript® Fax Option

**\$1249<sup>†</sup>**

†after \$250 mail-in rebate from NEC

- Receive and print conventional faxes or high-quality PostScript faxes on plain paper
- 2MB RAM / 6ppm printing
- Automatically switches interface between Mac & DOS platforms
- 35 Adobe fonts / 14 HP fonts
- PostScript fax option included



**Silentwriter Model 95f** ..... **\$1099<sup>†</sup>**  
6 pages per minute; 2MB RAM; 35 Adobe fonts; 14 HP fonts. Automatically switches interface between Mac & DOS

**Fax Upgrade for Model 95f** ..... **\$489**

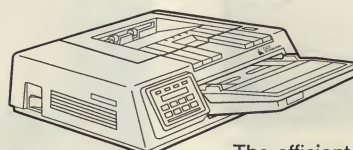
**2MB Memory for Model 95** ..... **\$119**

**Toner Cartridge for 95/97** ..... **\$165**

**Silentwriter Model 97** ..... **\$1499<sup>†</sup>**  
10 pages per minute; 2MB RAM; 35 Adobe fonts; 14 HP fonts. Automatically switches interface between Mac & DOS

**Silentwriter Model 97fx** ..... **\$1949<sup>†</sup>**  
Same as Model 97; includes PostScript® Fax option

†after \$250 mail-in rebate from NEC. Offer ends April 30, 1993.

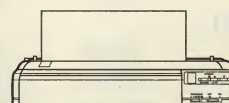


**BLP Elite™**  
**\$969**

The efficient, cost-saving PostScript GCC BLP Elite printer features edge-to-edge printing, straight-through paper path, full 200 sheet paper tray, 4 pages-per-minute printing, 16.67 MHz engine speeds processing, and one year warranty.

### GCC WriteMove® II. ... \$499

For your PowerBook. Only 2.5 lbs., battery-powered, 360x360 dpi laser-quality output, includes ATM™, 21 fonts, background printing, and On-Screen Page Preview.



### GCC PLP™ II. .... \$699

The only QuickDraw laser printer with edge-to-edge printing. Clear, crisp laser printing at 300 dpi, 21 Adobe fonts, ATM included, True-Type compatible, PostScript upgradeable.

### GCC SelectPress™ 600 ..... \$4149

True 600x600 dpi, PostScript Level 2 compatible, 35 resident fonts; wide spectrum of paper sizes—A6 to tabloid. Edge-to-edge printing with full bleed capability on 11"x17". Automatically switches between Mac or PC. One year warranty.



**LZR 960™ Printer.** ..... **\$1399**  
Unsurpassed performance for Mac users. 300 dpi; 9 ppm printing; 2MB RAM; Adobe PostScript Level 2; 35 resident fonts

**960 Toner Kit.** ..... **\$49**

**1560 Toner.** ..... **\$249**

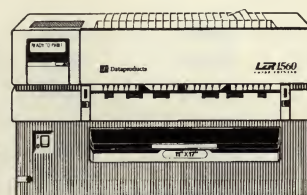
Complete line of Dataproducts peripherals & accessories available.

**LZR 1560™**  
**Ledger/A3 Laser Printer**

**\$2999**

with Two Trays

15 PPM; 300 or true 400 dpi resolution, 4MB RAM; Adobe PostScript Level 2; supports 11"x17" (ledger) size paper; models with one, two or three 250 count input trays



• Discover, MasterCard and VISA only. • Prices and product availability subject to change without notice. All specials and promotions are limited to available stock. • Manufacturer's warranties are honored by SYEX Express as well as the original manufacturer. • We ship via Airborne Express Overnight service. (Some rural areas require an extra day for delivery.) UPS rates are available upon request. • Orders placed by 4 p.m. CST weekdays for "in stock" items will ship that day for overnight delivery • APO/FPO box orders are shipped first class U.S. Mail. P.O. Boxes shipped via US Mail. • We are not responsible for typographical errors. • Defective software will be replaced immediately, and hardware will be repaired or replaced at our discretion. • A Return Authorization Number is required for any product returned. • All trademarks or registered trademarks are property of their respective owners.

MacWeek 4/26/93

**SYEX EXPRESS**

1030 Wirt Rd. #400, Houston, Tx 77055

Mon-Fri: 8 a.m. - 7 p.m. Sat: 10 a.m. - 5 p.m.  
(Central Standard Time)



1-800-258-2622  
1-800-CLUBMAC  
1-800-258-2622



425MB  
\$739

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
----------------------	-------	-------------	---------------------	----------	----------

<b>Go•DRIVE (2.5" HARD DRIVES DESIGNED FOR POWERBOOKS)</b>					
80mb	GO80	17ms	80mb	\$289	\$389
120mb	GO120	17ms	120mb	\$339	\$439

<b>ELS SERIES (3.5" LOW PROFILE AND LOW POWER)</b>					
42mb	ELS42	19ms	40mb	\$169	\$229
85mb	ELS85	17ms	82mb	\$195	\$255
127mb	ELS127	17ms	124mb	\$229	\$289
170mb	ELS170	17ms	160mb	\$259	\$319

<b>LPS SERIES (3.5" LOW PROFILE)</b>					
105mb	LPS105	11ms	100mb	\$215	\$275
120mb	LPS120	10ms	116mb	\$269	\$329
240mb	LPS240	10ms	234mb	\$339	\$399
525mb	LPS525	10ms	500mb	\$869	\$929

<b>ProDRIVE SERIES (3.5" HALF HEIGHT)</b>					
<b>BEST BUY</b> 425mb	<b>PRO425</b>	<b>9ms</b>	<b>406mb</b>	<b>\$739</b>	<b>\$799</b>
700mb	PRO700	10ms	670mb	\$1149	\$1209
1.0GIG	PRO1050	10ms	1001mb	\$1269	\$1329
1.2GIG	PRO1225	10ms	1165mb	\$1429	\$1489

GO•Drives carry a ONE Year Warranty. ELS drives, LPS drives, PRO drives carry a TWO Year Warranty.

IN STOCK!!  
NEW CLUBMAC  
3.5" 105MB  
REMOVABLE



SyQuest Drives include TWO Year Warranty, one cartridge and necessary cables, SCSI Director™ Formatting Utility. SyQuest Cartridges carry a ONE Year Warranty.



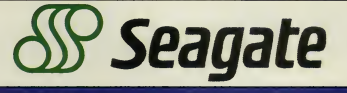
<b>ClubMac 3.5" 105MB REMOVABLES</b>	
ClubMac 105mb External (SQ3105A)	\$749
ClubMac 105mb Internal (Q900/950)	\$719
<b>ClubMac 88c REMOVABLES*</b>	
ClubMac 88c External (SQ5110C)	\$555
ClubMac 88c Internal	\$549
ClubMac 88c Dual	\$1045
* ClubMac 88c will read and write 44mb cartridges, but will not format 44mb cartridges.	
<b>ClubMac 44MB REMOVABLES</b>	
ClubMac 44mb External (SQ555)	\$378
ClubMac 44mb Internal	\$355
ClubMac 44mb Dual	\$695
<b>ClubMac 88MB REMOVABLES</b>	
ClubMac 88mb External (SQ5110)	\$479
ClubMac 88mb Internal	\$459
ClubMac 88mb Dual	\$875
<b>SYQUEST CARTRIDGES</b>	
105mb Cartridge	\$79
44mb Cartridge	\$63
88mb Cartridge	\$97



Unformatted Capacity	Model	Description
----------------------	-------	-------------

<b>3.5" DISK DRIVES</b>		
248mb	ST3283N	Low Profile
1.2GIG	ST11200N	Half Height
<b>WREN AND ELITE SERIES (5.25" FULL HEIGHT)</b>		
645mb	ST4767N	Wren Runner II
1.2GIG	ST41200N	Wren-7
1.6GIG	ST41651N	Wren-8
2.1GIG	ST42100N	Wren-9
1.6GIG	ST41600N	<b>Elite-1</b>
2.4GIG	ST42400N	<b>Elite-2</b>
3.4GIG	ST43400N	<b>Elite-3</b>

Seagate drives carry a ONE Year Warranty.



FEATURING...THE ELITE DRIVES

Access Time	Actual MAC Capacity	Internal	External
12ms	235mb	\$389	\$449
10.5ms	1000mb	\$1239	\$1299
11.9ms	634mb	\$1249	\$1349
15ms	989mb	\$1179	\$1279
15ms	1350mb	\$1599	\$1699
12.9ms	1900mb	\$1799	\$1899
11.5ms	1307mb	\$1839	\$1939
11ms	2050mb	\$2499	\$2599
11ms	2750mb	\$3389	\$3489



\*6300 RPM



Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
----------------------	-------	-------------	---------------------	----------	----------

<b>XT SERIES (3.5" LOW PROFILE)</b>					
120mb	7120S	15ms	121mb	\$209	\$269
207mb	7213S	15ms	202mb	\$299	\$359

<b>LXT &amp; MXT SERIES (3.5" HALF HEIGHT)</b>					
340mb	LXT-340	15ms	324mb	\$569	\$629
<b>FAST!!</b> 540mb*	MXT-540	8.5ms	521mb	\$899	\$959
<b>FAST!!</b> 1240mb*	MXT-1240	8.5ms	1150mb	\$1449	\$1509

<b>PANTHER SERIES (5.25" FULL HEIGHT)</b>					
1.2GIG	PO-12S	13ms	997mb	\$1199	\$1299
1.7GIG	P1-17S	13ms	1433mb	\$1449	\$1549

Maxtor drives carry a TWO Year Warranty.



FIVE  
YEAR  
WARRANTY

Unformatted Capacity	Model	Access Time	Actual MAC Capacity	Internal	External
----------------------	-------	-------------	---------------------	----------	----------

<b>3.5" HALF HEIGHT</b>					
425mb	M2623FA	9ms	405mb	\$859	\$919
520mb	M2624FA	9ms	496mb	\$879	\$939
1.1GIG	M2694	8.5ms	995mb	\$1649	\$1709
<b>5.25" FULL HEIGHT</b>					
1.2GIG	M2266	14.5ms	1029mb	\$1289	\$1389
2.0GIG	M2652	14.5ms	1665mb	\$2279	\$2379
2.4GIG	M2654	11.5ms	2000mb	\$2499	\$2599



ClubMac  
TAPE BACKUP Systems

TAPE BACKUP  
MEDIA

60 METER DAT	\$13
90 METER DAT	\$16
CT600N	\$19
CT600F	\$28
EXABYTE 8MM	\$18

NOW  
SHIPPING  
WITH  
RETROSPECT v2.0  
BACKUP SOFTWARE

Capacity	Model	Description	Media	Internal	External
155mb	Teac MT2ST/N50	Analog	CT600N	\$429	\$449
600mb	Teac MT2ST/F50	Analog	CT600F	\$629	\$649
500mb	Archive Viper 500	Analog	DL6250	\$679	\$699
2.0GIG	Archive Python	DAT, DDS	4mm	\$1049	\$1069
3-5GIG	Archive Turbo DAT	DAT, DDS-DC	4mm	\$1329	\$1349
2.0GIG	WangDAT 1300XL	DAT, DDS	4mm	\$1049	\$1069
3-5GIG	WangDAT 3200	DAT, DDS-DC	4mm	\$1339	\$1359
2.0GIG	Hewlett Packard 35470A	DAT, DDS	4mm	\$1269	\$1289
3-5GIG	Hewlett Packard 35480A	DAT, DDS-DC	4mm	\$1429	\$1449
2-5GIG	Exabyte 8205	Helical/Compression	8mm	\$1709	\$1729
5-10GIG	Exabyte 8505	Helical/Compression	8mm	\$2649	\$2669

Includes Retrospect v.2.0 Backup Software, One Tape and ONE Year Warranty

ClubMac OPTICAL Drives

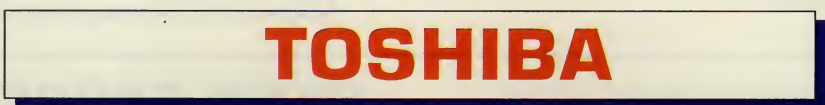
SHARP INTERNAL OPTICAL IS PERFECT FOR THE  
Mac IIvx, CENTRIS 650 & Q 900/950



Model		Capacity	Description	Seek	Internal	External
CMO-M2511A	Fujitsu	128mb	3.5" Low Profile	35ms	\$959	\$999
CMO-OD3000	Teac	128mb	3.5" Half Height	45ms	\$939	\$979
CMO-3100E	Ricoh	128mb	3.5" Half Height	45ms	\$1035	\$1075
CMO-JY750	Sharp	594/652mb	5.25" Half Height	40ms	\$2255	\$2295
CMO-5031E	Ricoh	594/652mb	5.25" Full Height	28ms		\$2345
CMO-Tahiti II	MaxOptix	650mb/1.0GIG	5.25" Full Height	35ms		\$3195
128mb Cartridge		3.5" Single Sided				\$39
594/652mb Cartridge		5.25"-512/1024 bytes/sec				\$95

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
----------------------	-------	-------------	-------------	---------------------	----------	----------

<b>NEW!</b> 213mb	MK2224FB	2.5" Low Profile	12ms	207mb	\$589	\$689
1230mb	MK538FB	3.5" Half Height	12ms	1185mb	\$1339	\$1439

Toshiba drive carries a ONE Year Warranty.



## ACCELERATORS

### DAYSTAR DIGITAL

#### POWERCACHE

25 MHZ TURBO 040	\$1079
33 MHZ TURBO 040	\$1329
FASTCACHE FOR TURBO 040 (25 MHZ)	\$249
FASTCACHE FOR TURBO 040 (33 MHZ)	\$335
CHARGER FOR PHOTOSHOP	\$789
COMPATIBLE WITH CLASSIC, SE, LC, SE/30, II, IIX, IICX, IISI, IICI, PERFORMA	
*POWERCACHE ADAPTER NOT INCLUDED	W/O FPU W/ FPU
33 MHZ POWERCACHE*	\$375 \$459
40 MHZ POWERCACHE*	\$545 \$635
50 MHZ POWERCACHE*	\$715 \$845
EQUALIZER LC	\$169 \$239
POWERCACHE ADAPTER	\$41

#### CACHE CARDS

FASTCACHE IISI / IISI WITH FPU	\$279/349
FASTCACHE IICI	\$199
FASTCACHE QUADRA - Q700/900	\$249
FASTCACHE QUADRA - Q700/900/950	\$375

#### EXPANSION BOARDS

DUALPORT IISI/ POWERMATH LC	\$165/115
-----------------------------	-----------

### RADIUS

ROCKET 25i	\$979
ROCKET 33	\$1899
SCSI-2 BOOSTER	\$249
ROCKETSHARE	\$399

### SUPERMAC

THUNDERSTORM	\$815
THUNDER 24	\$2349
THUNDER LITE	\$1875

## FAX MODEMS

### GLOBAL VILLAGE

#### POWERPORT (INTERNAL POWERBOOK FAX/MODEMS)

BRONZE (24/96 S/R FAX MODEM)	\$179
SILVER (96/96 S/R FAX MODEM)	\$359
GOLD (14,400 S/R FAX MODEM)	\$419

#### TELEPORT (EXTERNAL DESKTOP FAX/MODEMS)

BRONZE (24/96 S/R FAX MODEM)	\$189
SILVER (96/96 S/R FAX MODEM)	\$359
GOLD (14,400 S/R FAX MODEM)	\$419

### PSI

\$50 REBATE FROM PSI

POWERMODEM I (24/96/48 S/R FAX MODEM)	\$139
POWERMODEM II (24/96/96 S/R FAX MODEM)	\$225
POWERMODEM III (96/96 S/R FAX MODEM)	\$319*
POWERMODEM IV (14.4/14.4 S/R FAX MODEM)	\$388*
COMSTATION I	\$135
COMSTATION V	\$379*
COMSTATION NETWORK (WITH SW)	\$CALL*

### PIICEON

14.4 INTERNAL PWRBK FAX MODEM	\$289
-------------------------------	-------

### SUPRA TECHNOLOGY

SUPRAFAXMODEM V.32 WITH SOFTWARE	\$289
SUPRAFAXMODEM V.32 STANDALONE	\$239
SUPRAFAXMODEM 14.4 V.32 BIS WITH SW	\$349
SUPRAFAXMODEM 14.4 V.32 BIS STANDALONE	\$299



**US Robotics**  
The Intelligent Choice in Data Communications

**mac 6 fax \$249**

- 14,400 send & receive data & fax modem
- Includes MicroPhone LT & FAXstf software

## MISCELLANEOUS



**MEGA**  
BERNOULLI TRANSPORTABLE

90MB / 150MB \$499 / 785

TriPak CARTRIDGES

90MB / 150MB \$395 / 385

Bernoulli Transportables incl. one cartridge, cables, software, FIVE Year Warranty.

CLUBMAC PHONENET CONNECTOR	\$14
CLUBMAC EXTENDED KEYBOARD	\$79
EXT. HALF HT CABINET WITH CABLES	\$75
EXT. FULL HT CABINET WITH CABLES	\$125
EXT. DUO BAY WITH CABLES	\$125
EXT. 2.5" ENCLOSURE WITH CABLES	\$99
HARD DRIVE BRACKETS	\$19
25-50 OR 50-50 SCSI CABLE	\$10
HDI 30 - 50 PIN CABLE	\$35
HDI 30 - DB 25 CABLE	\$30
EXTERNAL TERMINATOR	\$7.50

## MEMORY

MEMORY PRICES CHANGE FREQUENTLY, CALL FOR CURRENT PRICES

### STANDARD MAC

1MB / 2MB X 8	\$32 / 65
4MB X 8 / 4MB WITH PAL	\$126 / 145
8MB / 16MB X 8	\$289 / 552

### MAC IIFX

1MB / 4MB / 8MB X 8	\$37 / 130 / 553
---------------------	------------------

### CENTRIS 610/650/LCIII

4MB / 8MB / 16MB	\$132 / 271 / 542
------------------	-------------------

### DUO 210/230

4MB / 8 MB	\$223 / 345
------------	-------------

### POWERBOOK 140/145/170

4MB / 6MB	\$161 / 218
-----------	-------------

### POWERBOOK 160/180

4MB / 6MB	\$173 / 248
-----------	-------------

8MB / 10MB	\$335 / 415
------------	-------------

### QUADRA 700

8MB / 16MB LOW PROFILE	\$329 / 576
------------------------	-------------

### QUADRA 800

4MB / 8MB / 16MB	\$171 / 306 / 715
------------------	-------------------

### QUADRA 950

16MB	\$583
------	-------

### VIDEO RAM

256K VRAM FOR QUADRAS	\$23
-----------------------	------

512K VRAM FOR LC, LCII, IIVX	\$46
------------------------------	------

## MONITORS & CARDS



**NEC**

**\$100 REBATE**

GET A \$100 REBATE WHEN YOU BUY THE NEC MACFG 24XP COLOR DISPLAY INTERFACE CARD AND A 15" OR 17" MULTISYNC FG COLOR MONITOR.

### COLOR MONITORS

15" MULTISYNC 3FGx	\$609
--------------------	-------

15" MULTISYNC 4FG (ACCUCOLOR)	\$729
-------------------------------	-------

17" MULTISYNC 5FG (IN STOCK)	\$1139
------------------------------	--------

17" MULTISYNC 5FG (ACCUCOLOR)	\$1299
-------------------------------	--------

21" MULTISYNC 6FG (ACCUCOLOR)	\$2349
-------------------------------	--------

### COLOR DISPLAY INTERFACE CARDS

MACFG 24XP	\$495
------------	-------

MACFG 24X / 8X	\$1199 / 639
----------------	--------------

### RADIUS

### MONITORS

COLOR DISPLAY/21	\$2319
------------------	--------

INTELLICOLOR DISPLAY/20	\$2365
-------------------------	--------

PRECISIONCOLOR PIVOT	\$935
----------------------	-------

PRECISIONCOLOR 20 OR 20/S	\$2319
---------------------------	--------

PRECISIONCOLOR/19	\$2029
-------------------	--------

FULL PG DISPLAY/MONO PIVOT	\$569/689
----------------------------	-----------

2-PG DISPLAY/19 / 21 / 21E	\$875/1139/1299
----------------------------	-----------------

### VIDEO CARDS

PRECISIONCOLOR 8XJ / 24X	\$489 / 1499
--------------------------	--------------

PRECISIONCOLOR 24XP / 24XK	\$489 / 815
----------------------------	-------------

UNIVERSALCOLOR 24 SM / LG	\$499 / 839
---------------------------	-------------

COLOR PIVOT / MONO PIVOT	\$499 / 249
--------------------------	-------------

2-PG / FULL PG DISPLAY	\$375 / 189
------------------------	-------------

POWerview	\$489
-----------	-------

### RASTEROPS

### MONITORS

21" COLOR (2168)	\$2519
------------------	--------

20 MULTIMODE COLOR (2085H)	\$1299
----------------------------	--------

20T MULTISCAN TRINITRON (2075RO)	\$2215
----------------------------------	--------

21" MONO/GS (2110)	\$999
--------------------	-------

15" MONO/GS PORTRAIT (1510)	\$499
-----------------------------	-------

### VIDEO CARDS

RASTEROPS 24XLI / 24SX	\$1889 / 619
------------------------	--------------

PAINTBOARD 24 / LI	\$1399 / 815
--------------------	--------------

### SUPERMAC

### MONITORS

SUPERMATCH 21 TWO-PAGE (9771)	\$2449
-------------------------------	--------

SUPERMATCH 20-T MULTIMODE	\$2449
---------------------------	--------

SUPERMATCH 20 COLOR (9782)	\$1479
----------------------------	--------

SUPERMATCH 17-T (9735)	\$1069
------------------------	--------

COLORPAGE T16II	\$1259
-----------------	--------

PLATINUM 21 2-PG DISPLAY (9761)	\$989
---------------------------------	-------

### VIDEO CARDS

SPECTRUM/24 SERIES IV	\$815
-----------------------	-------

SPECTRUM/24 PDQ PLUS	\$1515
----------------------	--------

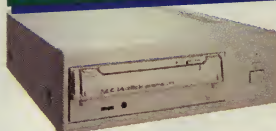
SPECTRUM/8-24 PDQ NUBUS OR IISI	\$815
---------------------------------	-------

FUTURA SX	\$469
-----------	-------

POWERLINK PRESENTER / DESKNET	\$429 / 599
-------------------------------	-------------

## MULTIMEDIA & CD-ROMS

### KODAK'S MULTISESSION PHOTO CD COMPLIANT



### MULTISPIN CDR-74

- 280ms access times
- SCSI-2 compatible
- 256k cache
- MultiSpin Technology
- TWO Year Warranty

NEC MULTISPIN CDR-74	\$619
----------------------	-------

NEC MULTIMEDIA GALLERY	\$799
------------------------	-------

NEC CD EXPRESS...FREE CD OFFER!!	\$349
----------------------------------	-------

NEC MULTISPIN CDR-38	\$479
----------------------	-------

### RADIUS

VIDEOVISION (BASIC SYSTEM)	\$1625
----------------------------	--------

VIDEOVISION (PRESENTATION)	\$1929
----------------------------	--------

(PRESENTATION PACKAGE INCLUDES ADOBE PREMIERE 2.0)

### RASTEROPS

RASTEROPS 24XLTV	\$2639
------------------	--------

MEDIATIME	\$1499
-----------	--------

VIDEOTIME	\$1135
-----------	--------

MOVIEPAK	\$1499
----------	--------

RASTEROPS 24STV	\$729
-----------------	-------

PHOTOPRO NUBUS	\$589
----------------	-------

VIDEO EXPANDER NTSC	\$529
---------------------	-------

### SUPERMAC

VIDEOSPIGOT NUBUS*	\$369
--------------------	-------

VIDEOSPIGOT IISI*	\$329
-------------------	-------

SPIGOT & SOUND NUBUS*	\$479
-----------------------	-------

VIDEOSPIGOT PRO NUBUS**	\$1149
-------------------------	--------

VIDEOSPIGOT IISI**	\$1229
--------------------	--------

SPIGOT & SOUND PRO NUBUS**	\$1069
----------------------------	--------

\* FREE ADOBE PREMIERE 2.0 LE \*\* FREE ADOBE PREMIERE 2.0 FULL VERSION

### TOSHIBA

TOSHIBA CD ROM	\$719
----------------	-------

## NETWORKING

### ASANTE

#### MAC SE (68000 PDS)

THK/THN/10BT, 32K	\$199
-------------------	-------

THK/10BT, 32K	\$149
---------------	-------

#### SCSI PRODUCTS

10BT, INCL SCSI CABLE	\$239
-----------------------	-------

SCSI CABLE-HPDI30 & DB25 FOR PWRBK	\$45
------------------------------------	------

#### FRIENDLYNET ADAPTERS

THN FRIENDLYNET MEDIA ADAPTER	\$79
-------------------------------	------

THK FRIENDLYNET MEDIA ADAPTER	\$79
-------------------------------	------

10BT FRIENDLYNET MEDIA ADAPTER	\$79
--------------------------------	------

#### IOBASET HUBS

10BT HUB W/12 10T, THK&THN PORT	\$479
---------------------------------	-------

12-PORT SMART HUB W/SMNP H/W	\$899
------------------------------	-------

#### ETHERTALK TO LOCALTALK

ASANTEPRINT, THK/THN	\$319
----------------------	-------

ASANTEPRINT, THK/10BT	\$319
-----------------------	-------

#### MAC II FAMILY, PERFORMA 600 (NUBUS)

THK/THN/10BT, 64K	\$199
-------------------	-------

THK/THN, 64K	\$149
--------------	-------

THK/10T, 64K	\$149
--------------	-------

#### MAC IISI & SE/30 (030 PDS)

THK/THN/10T, 64K, FPU SOCKET	\$199
------------------------------	-------

THK/THN, 64K, FPU SOCKET	\$149
--------------------------	-------

THK/THN, 64K, FPU CHIP	\$245
------------------------	-------

#### LC, LCII & PERFORMA 400 (020, 030 PDS)

THN/10BT, FPU SOCKET	\$199
----------------------	-------

10T, FPU SOCKET	\$149
-----------------	-------

10BT, FPU CHIP	\$245
----------------	-------

### CLUBMAC

14-PORT 10BT HUB WITH AUI/BNC	\$395
-------------------------------	-------

9-PORT 10BT HUB	\$195
-----------------	-------

10BT UNIT (QUADRAS, LASERWRITER IIG)	\$66
--------------------------------------	------

THK/THN/UTP, 64K (NUBUS)	\$129
--------------------------	-------

## PRINTERS

### GCC

PLP II	\$799
BLP ELITE (4 PPM)	\$1149
WIDEWRIER 360	\$1429
WRITE MOVE II	\$479
WRITE IMPACT (24-PIN)	\$499



**NEC**

**NEW LOWER PRICES**

\$250 REBATE FROM NEC



# WE'VE PUT ON THE OPTICAL TE



## SPIN CYCLONE 3.5 OPTICAL DRIVE

We've accomplished two firsts. The first is that this is our first optical drive. The second first, even more exciting than the first first (maybe we should have put the second first first), is that this is the first second-generation optical drive for under a thousand bucks. It uses ISO standard 128 MB 3.5 cartridges, so you can use them with other drives. And it comes with our premium Cyclone small-footprint, "brick" enclosure. Plus a two year warranty. So, you ask, "Should I try it first?" In a second.

**Cyclone 3.5 Optical Drive**  
Extra Cartridges: \*35

**\$999**

## SPIN DOUBLE SPEED CD ROM DRIVE

If you guessed that by spinning a CD at twice the speed, the Toshiba XM 3401 drive mechanism inside this Spin CD ROM drive can access data twice as fast, that expensive college education isn't going to waste. In fact, it breaks the 200 msec access time barrier. And offers sustained transfer rates of 330 KB/sec. Other CD ROM drives are left with their jaws hanging wide open. This drive is your best choice if you're running Quicktime® movies, photo CD, or multi-media apps. Pretty smart.

**Spin Double Speed CD ROM Drive (External only)** **\$499**

## THE DEC DSP-3105 1-GIG DRIVE

Introducing the DEC DSP-3105 1-gigabyte drive. This Eddy award-winning monster moves like Ricochet Rabbit on double espresso. It's the world's fastest 3.5 inch drive. Thanks, in part, to a 5400 RPM spindle speed and a whopping 512K drive cache. With our minimum-footprint Cyclone™ enclosure, and a great price, and 5-year warranty, no one can touch it for value. Says MacUser: "It's a dream drive."

<b>Cyclone enclosure</b>	<b>\$1799</b>
<b>Classic-style footprint enclosure</b>	<b>\$1749</b>
<b>Internal</b>	<b>\$1699</b>



## CYCLONE DAT DRIVES

If you're looking for DAT, you'll love dis. Cyclone DAT drives. They feature the zephyr-like Wang DAT drive mechanism – the industry standard for reliability. Our own Cyclone small-footprint chassis. And a price that won't dis you. Our standard Cyclone DAT drive has a 2.0 GB capacity. The compression model, up to 5 gigs. Both come with Dantz™ Retrospect back-up software, and a 90-meter DAT tape, free. Dat's all you need.

**Cyclone Standard DAT** **\$1199**

**Cyclone Compression DAT** **\$1349**

# ORDER DIRECT. CALL:



# A NEW SPIN LATEST TECHNOLOGY.



## SYQUEST 5110C 88/44 DRIVE

You want to upgrade your removable drive to 88 megs, but you've got a shelf full of old 44s staring you in the face. You have two options. One, use the old cartridges as coasters at geek cocktail parties. Or two, buy the new Spin Syquest 5110C drive that reads and writes both 44 and 88 meg cartridges. True, this drive does not format 44 MB cartridges, but we have a way around that - pre-formatted 44s.

Syquest 5110C 44/88 Drive	\$589
Syquest 88 MB Removable	\$489
Syquest 44 MB Removable	\$389
<b>Syquest Media</b>	
Unformatted 44 MB	\$61
Unformatted 88 MB	\$99
Formatted 44 MB	\$85
Formatted 88 MB	\$139



## ZERO FOOTPRINT DRIVES

We've gotten letters lately - mostly in crayon - from a few folks asking why we call these drives "zero footprint" when they obviously exist in three dimensions and take up space. We'd like to point out that when placed under your Plus or Classic or SE it takes up no more space than the computer already does. Zero. Neat trick, huh? Our sturdy zero-footprint drives feature a number of different mechanisms from makers like Conner, Quantum, Toshiba. Check the matrix below for the capacity you need. And please, put down that crayon.

Capacity (MB)	Model Number	Average Access Time (msec)	Transfer rate (K/sec)	MTBF (Hours)	MFG warranty (months)	Internal Drive Price	External Drive Price	Cyclone Drive Price
<b>Conner</b>								
85	CP-30080E	16	1300	150000	24	\$199	\$269	
120	CP-30100	16	1300	150000	24	\$269	\$339	
170	CP-30170E	16	1400	150000	24	\$279	\$359	
213	CP-30200	15	2000	150000	24	\$349	\$419	
<b>Quantum</b>								
85	ELS 85S	17	1800	250000	24	\$199	\$269	
127	ELS 127S	17	1800	250000	24	\$269	\$339	
170	ELS 170S	17	2000	250000	24	\$299	\$369	
240	LPS 240S	16	2300	250000	24	\$399	\$469	
80 (Pwrbk)	GRS-80	17	1900	150000	12	\$349		
<b>Toshiba</b>								
210 MB (Pwrbk)	MK-2224	12	1800	150000	12	\$549		
1.2 GB	MK-538	12	2800	250000	36	\$1149	\$1199	\$1249
<b>DEC</b>								
1.05GB	DSP-3105	9.5	2600	250000	60	\$1699	\$1749	\$1799
<b>Seagate</b>								
456MB	ST-3550N	12	3500	250000	36	\$849	\$899	\$949
1.05GB	ST-11200N	10.5	3200	200000	60	\$1199	\$1249	\$1299
<b>Fujitsu</b>								
520MB	M2624FA	9	2700	200000	60	\$899	\$949	\$999
1.06 GB	M2694FA	9	2800	200000	60	\$1549	\$1599	\$1649

Spin, The Spin tornado and Cyclone are trademarks of Spin Peripherals, Inc. All other trademarks are the property of their respective holders.

## 30 DAYS TO DECIDE.

If you're not satisfied, neither are we (we're referring, of course, to Macintosh peripherals only). That's why every Spin product comes with a 30-day money back guarantee. Test-drive any Spin product. Give it a real workout. If you're not happy, return it within 30 days for a refund. Was that good for you?

## MORE THAN JUST A LOW PRICE.

Flip through these pages (not right now, it's just a figure of speech), and you'll see a lot of low prices. The difference with Spin is that you get more. And not just a little more. We include many free things that others charge you for. Like a double-shielded SCSI cable. External terminator. A power supply designed for constant use. Not to mention our own Spin Disk Utilities with free upgrades for a year, system software, and unlimited tech support as long as you own a Spin drive. We aim to please. Call one of the other guys and ask what they'll give you for free. The cardboard box? The owner's manual? Then call us back.



381 Elliot Street, Newton, MA 02164-1162

Phone: 1-617-965-9882 Fax: 1-617-965-6257

# 1-800-466-1200



MWK426



# Buy direct from La Cie,



## Internal, ZFP™, ZFP+™, Cirrus™ & Tsunami™ Drives

Our hard drives feature a wide selection of capacities and quality brand-name mechanisms—all at very affordable prices. All drives have switchable active termination, efficient, quiet fans and universal power supplies.\*

**Closeout!**

Quantum		Internal	ZFP	Tsunami		
40MB (3½")		\$159	\$219	\$279		
85MB (3½")		\$199	\$259	\$319		
120MB (3½")		\$349	\$409	\$469		
127MB (3½")		\$249	\$309	\$369		
170MB (3½")		\$279	\$339	\$399		
240MB (3½")		\$369	\$429	\$489		
525MB (3½")		\$899	\$959	\$1019		
700MB (3½")		\$1179	\$1239	\$1299		
1.05GB (3½")		\$1339	\$1399	\$1459		
1.2GB (3½")		\$1489	\$1549	\$1609		
80MB (2½") for Powerbook		\$299	See PocketDrive			
120MB (2½") for Powerbook		\$389	See PocketDrive			
160MB (2½") for Powerbook		\$499	See PocketDrive			
Seagate		Internal	ZFP+	HP	Internal	ZFP+
1.6GB (5¼")		\$2299	\$2449	1.6GB (5¼")	\$2459	\$2609
2.1GB (5¼")		\$2949	\$3099			
2.4GB (5¼")		\$3299	\$3449			



## PocketDrive™

Pack it in your pocket, purse or briefcase. PocketDrives offer convenient desktop connection at a great price.

40MB (2 1/2") incl. T-connector	\$299
80MB (2 1/2") incl. T-connector	\$499
120MB (2 1/2") incl. T-connector	\$599
160MB (2 1/2") incl. T-connector	\$729



Optional PocketDock Cable	\$59
Extra T-Connector	\$59
110V Accessory Kit	\$69

## Powerbook Internals

Pack more power in your Powerbook. Comes with brackets and instructions.

80MB Powerbook Internal	\$299
120MB Powerbook Internal	\$389
160MB Powerbook Internal	\$499

## Silverlining™

Hailed as one of the most powerful and useful hard disk management software programs available, Silverlining offers unique features found nowhere else! Give your hard disk a Silverlining.

Silverlining	\$149
--------------	-------



# a Quantum Company

**FREE!**  
Cleaning Cartridge  
\$19.95 value\*



## Cirrus Optical

Our quiet Cirrus Optical drives offer 128MB removable media storage, compact portability and fast 38ms performance. Includes one free cartridge (\$79 value).

	Internal	External
128MB 3 1/2" Optical Drive with Retrospect	<b>\$1399</b>	<b>\$1499</b>
128MB Optical Disk		<b>\$79</b>

\*While supplies last

## Cirrus Backup

Our Cirrus backup solutions have the power to handle large backup jobs. Includes Retrospect™ and 1 free tape.

	Internal	External
155MB Tape Drive		<b>\$629</b>
600MB Tape Drive	<b>\$799</b>	<b>\$919</b>
1.3-2.0GB DAT	<b>\$1439</b>	<b>\$1559</b>
4-8GB Comp. DAT	<b>\$1549</b>	<b>\$1649</b>

**88C**  
Now Available!



## ZFP Removable

Our 44-88MB removable media drives deliver Syquest technology in a zero footprint case. Includes 1 free cartridge.

44MB Drive	<b>\$599</b>
88MB Drive (88C)	<b>\$719</b>
44MB Cartridge	<b>\$79</b>
88MB Cartridge	<b>\$119</b>

## ExpressDrive™

Here's tight security and portability. La Cie Express Drives offer removable drive convenience and Quantum quality.

ExpressDrive Chassis	<b>\$399</b>
50MB Quantum LPS Drive	<b>\$349</b>
100MB Quantum LPS Drive	<b>\$419</b>
120MB Quantum LPS Drive	<b>\$469</b>
240MB Quantum LPS Drive	<b>\$819</b>



Actual Silverscanner II Image

## Silverscanner II™

One look at the image above should convince you that our next generation Silverscanner can really perform! Superior line art, detailed gray-scale and gorgeous color are the trademarks of this one pass, 24bit, high resolution, feature-packed scanning machine. Just scan it!

### La Cie Silverscanner II

with Color It!  
and Read-It O.C.R. Pro! **\$1599**

with Photoshop  
and Read-It O.C.R. Pro! **\$1999**

with Photoshop, ColorStudio  
and Read-It O.C.R. Pro! **\$2099**

### La Cie Silverscanner **Closeout!**

with Color It!  
and Read-It O.C.R. Pro! **\$999**

with Photoshop  
and Read-It O.C.R. Pro! **\$1349**

with Photoshop, ColorStudio  
and Read-It O.C.R. Pro! **\$1449**

Call now for fast, friendly service!

# 800-999-1477

International 503-520-9000 Fax 503-520-9100 6 a.m.-6 p.m. PST Mon.-Fri. VISA, MasterCard, C.O.D. and approved purchase orders accepted\*



\*Call for details on terms, conditions, limited money back guarantee and free offers. System 7.0.1 software included only with certain configurations. ZFP+ Drives do not have switchable termination. Prices do not include shipping and only apply to products shipped within the continental United States. Please contact La Cie for international distribution. Add sales tax where applicable. ZFP, ZFP+, Cirrus, Tsunami, PocketDrive, PocketDock, ExpressDrive, Silverscanner, Silverscan, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, descriptions, products and services herein are subject to change without notice or recourse. © Copyright 1993 La Cie, Ltd. 8700 SW Creekside Place, Beaverton, OR 97005. Phone: (503) 520-9000, Fax: (503) 520-9100. All rights reserved. Printed in U.S.A.

**BEST!**  
Macworld  
Hard Drive  
under 80MB

**BEST!**  
Macworld  
Hard Drive  
80-200MB

**BEST!**  
Macworld  
Hard Drive  
over 200MB

**BEST!**  
Macworld  
Color Scanner  
Silverscanner

**FCC**  
Certified!

**TOLL-FREE!**  
Technical  
Support

**TOLL-FREE!**  
Customer  
Service

**FREE!**  
Silverlining™

**Switchable**  
Termination!

**Universal**  
Power  
Supply!

**30 Day**  
Money Back  
Guarantee\*



# Hot Hard Drive Prices From Mac Direct!

**Fujitsu Specials!**  
520mb 3.5" Internal \$788  
1.2 Gig 5.25 Internal \$1298  
2.4 Gig 5.25 Internal \$2448

## Conner Drives

	Internal	External
C 42 MB 3.5" LPS, 2 yr warr, 150,000 MTBF .....	\$168	\$218
C 85 MB 3.5" LPS, 2 yr warr, 150,000 MTBF .....	\$198	\$258
C 120 MB 3.5" LPS, 2 yr warr, 150,000 MTBF .....	\$248	\$308
C 170 MB 3.5" LPS, 2 yr warr, 150,000 MTBF .....	\$288	\$348
C 212 MB 3.5" LPS, 9ms, 2 yr warr, 150,000 MTBF, Fast SCSI .....	\$368	\$428
C 540 MB 3.5" 8.5 ms, 2 yr Warr, 150,000 MTBF, Fast SCSI .....	\$898	\$958

These new Conner drives are so reliable, that Conner has been one of Apples largest suppliers of drives. The 150,000 hours Mean Time Between Failure and the incredible speed of the 540 are just two reasons to buy a Conner.

## Fujitsu Drives

	Internal	External
520 MB 3.5" 9ms, Fast SCSI, 5yr warr, 200,000 MTBF .....	\$788	\$868
1.1 Gig 3.5" 8.5ms, 5yr warr, 300,000 MTBF, Fast SCSI .....	\$1598	\$1658
1.2 Gig 5.25" 11.5ms, 5yr warr, (MacWorlds Fastest Gig) Fast SCSI .....	\$1288	\$1388
2.06 Gig 5.25" 11.5ms, 5yr warr, 300,000 MTBF, Fast SCSI .....	\$2288	\$2388
2.4 Gig 5.25" 11.5ms, 5yr warr, 300,000 MTBF, Fast SCSI .....	\$2448	\$2548

\*Mean Time Between Failure is the average life expectancy of a drive.

## Toshiba Drives

	Internal	External
1.2 Gig 3.5" 12.5ms, 256 cache, SCSI-2, Internal for CI,Quadra .....	\$1248	\$1298
830 MB 3.5" 12.5ms, 256 cache, SCSI-2, Internal for CI,Quadra .....	\$998	\$1098

## 213 MB 2.5" PowerBook Drive

- 213mb inside your PowerBook!
- Fast, quiet, low power
- Fastest drive available for the PowerBook,
- Only 0.12 watts power usage in sleep mode and 3.0 during access

Internal kit .....	\$688
External with battery .....	\$788
PowerBook Cable .....	\$30



## Seagate Drives for audio/video editing

	Internal	External
1.2 Gig 3.5" 10.5ms, 1 Yr warranty .....	\$1398	\$1498
1.2 Gig Wren 7 5.25" 15ms, 1 Yr warranty .....	\$1258	\$1358
1.6 Gig Wren 8 5.25" 15ms, 1 Yr warranty .....	\$1748	\$1848
2.1 Gig Wren 9 5.25" 12.5ms, 5 Yr warranty .....	\$1948	\$2048
1.6 Gig Elite 1 5.25" 11.5ms, 1 Yr warranty .....	\$1898	\$1998
2.4 Gig Elite 2 5.25" 11ms, 5 Yr warranty .....	\$2598	\$2698
3.4 Gig Elite 3 5.25" 11ms, 5 Yr warranty .....	\$3498	\$3598

## CD ROM Drives from Toshiba

Toshiba 3401 "Kodak photo CD" Multisession, 200ms access time, ....	\$498
---	-------

# MAC DIRECT

Specialists in Mac Peripherals

**Optical Specials!**  
128 MB 3.5" Series II \$898  
128 MB 3.5" Series V \$998  
256 MB 3.5" Series X \$1698

## Smart Storage Solutions

### SyQuest Removable Drives

44 MB Removable 19ms access time, 2 Yr Warr, Includes cartridge .....	\$388
88 MB Removable 19ms access time, 2 Yr Warr, Includes cartridge .....	\$498
88C MB Removable 19ms, 2 Yr Warr, Includes cartridge, Fully Compatible .....	\$598

**NU DESIGN**

### Optical Drives from NuDesign

128 MB 3.5" Series II fast 37ms access, includes cartridge, Ontrack Software .....	\$898
128 MB 3.5" Series V fast 32ms access, includes cartridge, FWB Software .....	\$998
256 MB 3.5" Series X fast, read/write 128mb compatible, includes cartridge .....	\$1698
600 MB Hyperspace 5.25" 28ms Access time, 1MB/sec Trans, free cart. ....	\$2598

- MacWorlds Editors Choice!
- Super access time and unlimited storage
- Lowest cost per megabyte for disk storage
- Comes with FWB Hard Disk Tool Kit
- "Fast, inexpensive, good technical support, a rare combination of qualities in a storage device." MacWorld

### The NuDesign 3.5" Optical MacWorlds Editors Choice



### DAT Drives from NuDesign

2.1 Gig with SoftBackup , Includes free 90m DAT .....	\$998
2.1 Gig with Retrospect , Includes free 9 0m DAT .....	\$1098
2.1 Gig with Retrospect Remote , Includes free 9 0m DAT .....	\$1298
5.0 Gig with SoftBackup , Includes free 90m DAT .....	\$1398
5.0 Gig with Retrospect , Includes free 90m DAT .....	\$1498
5.0 Gig with Retrospect Remote , Includes free 90m DAT .....	\$1698

**NU DESIGN**

### The NuDesign DAT



- Up to 2.1 Gig per tape
- Our best buy ever on DAT!
- Up to 10 mb per minute backup time
- Available with a complete version of Retrospect or SoftBackup

60 East Chestnut - 145, Chicago, IL 60611

No charge, Visa or Mastercard, Amex accepted, COD, Telecheck Approved Checks, Gov., Corp., Univ., P.O.s welcome. All new drives, preformatted with latest stable system software. Factory warranty. Bracket, cables and software included. 30 Day Money back Guarantee covers drive products only. Return Authorization number required for returns. Prices, terms and availability subject to change without notice.

# 800-621-8462

Hours: 8:30 - 8:00 CST, Saturdays 10:00 - 4:00  
Technical Support (8:30-5:00) 800-759-2133

**Hey" MacDirect Now sells Simms,  
Call for our low prices!**



# MONITOR SPECIAL!

## SAMPO 20" Color System

# 998.00

### While Supplies Last

### Sampo 20"

8 Bit Color System.....	\$998.00
Mono System.....	\$698.00
Grey Scale System .....	\$998.00

- The SAMPO is a high quality display without the high cost!
- Includes 1 bit, or 8 bit Bit Video board and cable
- Resolution 1024 x 768 at 72 DPI
- Display supports all Mac's

### Trinitron 20" Color System

Monitor Only for Quadra & Centris .....	\$1898.00
8 and 24 bit RasterOps interface available .....	Call

- The Trinitron-20 is a 20" monitor incorporating Sony's patented technology and one of our best buys! True Trinitron color at a great price!
- Display supports all Mac's

## Get the Big Picture with MacDirect Monitors



16" SONY Trinitron  
**\$1098**

- Plug compatible Quadra, Centris
- Plug compatible Si, Ci, LC's at 640x480



NuDesign Full Page Display  
**\$398**

- Plug compatible with Si, Ci, LC III, Centris 610 & 650 and Quadra's
- 1 Bit System available for all macs 488.00

NuDesign Full Page Grey Scale .....	\$398.00
With 1 Bit Interface Card .....	\$488.00

- Plug compatible with Si, Ci, LC III, Centris 610 & 650 and Quadra (16 levels of Grey).
- 1 Bit System available for all macs

## MODEMS FROM MACDIRECT

### Prometheus Modems

Pro Ultima Home Office.....	\$408
Promodem 144i .....	\$288
Promodem 144e.....	\$288
Promodem 24e .....	\$138
Promodem Mini 2400 .....	\$89

### Zoom Modems

Zoom Faxmodem PBK .....	\$129
Zoom Faxmodem PKT	
Portable .....	\$149
Zoom Faxmodem FXV .....	\$188
Zoom Faxmodem FXV.32	\$308

## SAMSUNG 1200 DPI PRINTER

SAMSUNG 300 dpi Printer .....	\$1298.00
1200 DPI Upgrade (Available in May) .....	\$998.00

- Incredible 1200 dpi upgradeability allows for future growth
- SAMSUNG is one of the worlds largest electronics companies!
- Includes PostScript and PCL-5 compatibility
- Intensely fast Intel i960 RISC processor

## Call About Simms!

Model60 NS ...70 NS....80 NS	
1x8 ....Call .....	Call.....\$33
2x8 ....Call .....	Call.....\$63
4x8 ....Call .....	Call.....\$133
8x8 ....Call .....	Call.....\$279
16x8 FXCall.....	Call.....\$549
16x8 Q950 .....	Call.....Call
	\$515

Memory for LCIII, Centris 610, 650  
4mb....Call 8mb....Call  
16mb .....

We carry most Mac Memory, Please Call for prices!

## UMAX Color Scanners

Umax UC-630 With PhotoShop 2.5.....	\$1098.00
Umax UC-840 With PhotoShop 2.5.....	\$1298.00

Transparency/Slide Scanner Option.....	\$728.00
Automatic Document Feeder .....	\$498.00

- Rated four mice by MacUser (Dec '91)
- Rated fastest by MacUser(Dec '91)
- "Boasts the highest vertical resolution..."Umax produced the best images..." excel(s) in speed and color accuracy" MacUser

Umax UC-1200S With PhotoShop 2.5 .....	\$3098.00
Transparency/Slide Scanner Option.....	\$798.00

- Incredible 1200 dpi scanning res. recognizes 1 billion colors internally
- Single-pass design increases scanning speed
- Includes Adobe Photoshop 2.5

Umax 600DPI Greyscale With Typereader OCR Software, Ofoto and Publish It, .....	\$898.00
---	----------

- An incredible OCR package with over \$1000 in software alone,

Photoshop Version 2.5  
Is Now Shipped with  
all our color scanners



# MACDIRECT

# 800-621-8462

Hours: 8:30 - 8:00 CST,  
Saturdays 10:00 - 4:00  
Technical Support (8:30-5:00)  
800-759-2133



#1 IN

SERVICE

# MACCENTER<sup>®</sup>

The Center Of The Macintosh Universe<sup>™</sup>

NEC

New Price!

**\$949**

**Silentwriter Model 95f**

\* with \$250 End User Rebate



TEXAS  
INSTRUMENTS

microWriter  
PS 23

**\$899**

microLaser Turbo  
microLaser Plus PS17  
microLaser Plus PS35



\$1399  
\$1099  
\$1239

hp HEWLETT  
PACKARD



**\$1999**

**LASERJET 4M**

## MAC SYSTEMS

PowerBook  
180 4.120

**\$3799**

WHILE  
THEY  
LAST!

WE HAVE  
**IN STOCK**

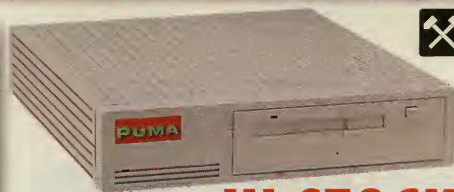
ALL POWERBOOKS: 145, 160, 165c,  
180, 210, 230, AND ALSO CENTRIS, LCIII,  
COLOR CLASSIC & QUADRAS  
CALL TO CLAIM YOURS!



## OPTICAL DRIVES

PUMA<sup>™</sup>  
256 MB  
Optical

CAPTURED,  
BUT NOT  
TAME<sup>SM</sup>



FWB  
incorporated

FWB Hard Disk  
Toolkit PE  
included with all drives

**IN STOCK!**

- Puma<sup>™</sup> 256 reads & writes ISO/ANSI standard 128 MB cartridges and a true, non-compressed 256 MB
- Fast transfer rate up to 1.2 MB/second
- Fast 35 ms access time
- Optical reliability (10 year data life)

Puma<sup>™</sup> 256 MB 3.5" Drive **\$1799**  
Puma<sup>™</sup> 128 MB 3.5" Drive **\$999**  
128/256 MB 3.5" Cartridge **\$59/\$99**

Five Year Warranty available!

## CD-ROM

**FASTEST**  
CD-ROM DRIVE  
IN THE WORLD!

**TOSHIBA  
XM3401**

195ms access time

**\$629**

includes

FWB CD-ROM  
Toolkit

## SIMMs

**\$32 \$105**

1 Meg  
SIMMs  
70ns  
80ns

WHILE  
THEY  
LAST!

4 Meg  
SIMMs  
with  
tradein

**LIFETIME WARRANTY**

## VIDEO BOARDS

radius<sup>™</sup>  
**24X \$999**

24-bit Accelerated Video Graphics Card for 13 to 21 inch monitors

## HARD DRIVES



FWB  
incorporated

FWB Hard Disk Toolkit PE  
included with all drives



**FIVE YEAR WARRANTY  
30 DAY MONEY BACK  
GUARANTEE!**

**GIG ALLEY<sup>SM</sup>**

**TOSHIBA 3.5"**  
**1.4 Gig** **\$1399**  
internal mount

SCSI-2  
Hard Drive 12.5 ms access time  
**MICROPOLIS<sup>®</sup> 3.5"**  
**1.2 Gig** **\$1699**  
internal mount

SCSI-2  
Hard Drive 10 ms access time  
**FUJITSU 3.5"**  
**1.1 Gig** **\$1699**  
internal mount

International ☎ United Kingdom 0800-89-5074 France 05-90-1430 Germany 0130-81-4748 Mexico 95-800-292-7029

8:00 am – 8:00 pm CST M-F  
10:00 am – 5:00 pm CST Sat  
Sunday: Call, you may get lucky

4930 South Congress Avenue, Suite 303  
Austin, Texas 78745-2381

**Net 30 day terms**

for all Government, Military, School District and  
University Purchase Orders. Net 30 day terms  
are also available for all approved Corporate  
Purchase Orders. Call for details on our Corporate  
Purchase Program.

MasterCard & Visa accepted with NO surcharge.  
Credit cards will not be charged until  
order is shipped.

NO surcharge or minimum  
for Fax or Foreign orders.

Most products available in 110v & 220v.  
Prices subject to change without notice.

All returns require approval and  
are subject to a restocking fee.

© MacCenter<sup>®</sup> 1993

FAX 512-444-3726  
International Orders 512-445-5114

**800 950 3726**





# Our **New** Prices Have the Competition Seeing Red!



## STORAGE!



44MB REMOVABLE

**\$469**

Procom 44 MB Removable with cartridge  
See below for complete line of storage products

## MAGNAVOX

A Philips Company

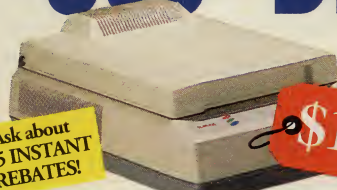


**\$399**

Magnovox 14" Color for all Macs  
14" display with 24-bit color card \$829

## UMAX®

### 800 <sup>24-BIT</sup> DPI



**\$1345**

Umax UC840 Color Scanner with Photoshop  
(shown with optional transparency unit)

## Macintosh



**\$1099**

Mac LC III 4/40 (price is for CPU only)  
LC III with 14" color display & keyboard \$1,645

### Drives & Storage



**\$739**

Procom CD-Station Super fast 200ms  
access time CD-ROM includes 7 popular  
CD titles, stereo speakers & headphones.

#### Removable Drives

88 Read/Write 44 Syquest Drive	599
21MB Floptical	399
3.5" 128MB Optical, Sony Mech.	1495
5.25" 650MB Optical	2795
2GB DAT Backup	1499

Procom Technology manufactures high  
performance, high quality computer storage  
devices. All Procom products are fully  
formatted, tested and backed by 1-5yr  
warranties along with MacNews' own 30 day  
MBG. Call for more info.

## SIMMs

All  
SIMMs \$3  
Fed Ex!

1 MB SIMM, 70ns	35
4 MB SIMM, 70ns	124
16 MB SIMM, 70ns	569
8 MB SIMM, 70ns (PB180&160)	369
Memory for new Macs	Call

Lifetime warranty on all SIMMs!  
Due to federal tariffs, SIMM prices may change  
significantly. Call for latest prices!

### Printers

Newgen 400dpi/600dpi	Call/1795
Newgen 11x17" 600dpi	3795
Texas Instruments TURBO	1449
Texas Instruments microLaser PS17	1129
Apple LaserWriter IIF/IIG	2395/3195

## JetFill

Refills for Apple, Cannon, HP Ink Jet  
Printers. All in stock. Call for pricing.

### Displays & Cards

## PHILIPS



**\$2,195**

Philips 20" Trinitron  
Multi-frequency,  
Trinitron display,  
meets MPRII

Philips/Magavox 14" display	399
Philips 15" color display	599
Philips 17" Trinitron display	1095
Philips 21" color display	2695
8-bit & 24-bit Accelerated Color Cards available for all displays. Call for prices.	

Mitsubishi Diamond Scan 14" display	429
Sony 1304/1604	Call/Call
Seiko 14" 1445 Trinitron	469
Seiko 17" Trinitron	1049
RasterOps ProColor 32 Interface	2799
RasterOps 8XL Interface (8-bit to 21")	449
E-Machines Color Cards	Call
E-Machines PowerLink Presenter	495

## LAPIS COLOR Cards

For Mac Plus, Classic, SE,  
SE/30, LC, LC II, IIsi, II-  
family & Quadras



**Call**

8-bit card for SE/30, II's & Quads  
8/16-bit for SE/30, II's & Quads  
24-bit for SE/30, II's & Quads  
LC-TV lets LC's work w/any TV  
Lapis 15" portrait grayscale display  
Great for SE/30's  
Call for New Pricing and  
Let us help you pick the right card!

## radius

NEW Precision  
Color Pivot



**\$929**

15" Portrait/  
Landscape.  
Compatible  
with Quadra  
& Centris on-  
board video

New Radius PrecisionColor 20S	2345
Radius MonoPivot	699
Radius 24Xp/24Xk/24X	495/795/Call
VideoVision with Premier	1899
Radius Rockets/RocketShare	Call

## SIGMA DESIGNS



Sigma Designs  
17" Trinitron  
Multi-  
resolution,  
Trinitron  
display

**\$1245**

PowerPortrait 15" display (for SCSI)	Call
PageView gray scale 15" display	499
21" SilverView Pro (mono/GS)	1099

## Snooper

FREE Virex & Norton!



**\$109**

Snooper Special - While Supplies Last!  
2.0 Software with Virex & Norton 109  
2.0 NuBus Kit with Virex & Norton 149

### Scanners

Umax UC630, 600dpi with Photoshop	1095
Sharp JX-320 600dpi with Photoshop	999
Tamarack Artiscan 800C w/ Photoshop	1295
Tamarack Artiscan 1200C w/ Photoshop	1995
24-bit Color, True optical 1200 dpi	

## MICROTEK

NEW Microtek ScanMaker II	859
1200 dpi, 24-bit color with Photoshop LE	
NEW Microtek ScanMaker IIx	1099
1200 dpi, 24-bit color with full Photoshop	
Transparency Option for II & IIx	Call
Microtek ScanMaker 1850S	999
1850dpi, 24-bit color slide scanner, Photoshop	
ASK ABOUT \$75 MICROTEK REBATES	

## Kai's POWER TOOLS™ for Adobe Photoshop®

HSC Kai's Power Tools \$99  
"Amazingly powerful, yet easy to use plug-in filters  
for Photoshop. If you use Photoshop you'll love this  
product!" Publish Magazine 5-Star winner.  
Call for SPECIAL PRICE with SCANNER!



**\$259**

OmniPage Professional OCR 629  
Image Assistant 329



**\$99**

Axion Switch  
Now you can connect 3  
serial devices to your Mac

## Macs

Mac LC III, 4/80	1229
Mac IIvx, 4/0	1395
Centris 650, 4/80	2395
Quadra 800 8/230	3995
Quadra 950 8/0	4595
PowerBooks 160, 180 & Duos	Call

## Quadra Accelerator

128k, copy back cache card speeds up the Quadra  
700, 900 & 950 fast mode by up to 25%.

QuadCache 25 for 700 & 900	269
QuadCache 33 for 950	349

## Network Dayna

Dayna EtherPrint  
Ethernet connection  
for printers

Ethernet Interfaces in Thin or 10baseT	
DaynaPort, Mac II family, IIsi	149
DaynaPort, Mac SE/30, LC, LC II	149
MiniHub/Hub12	239679
PathFinder Router	629
SCSI Link	269
Let us help you pick the right interface!	

### Modems

Hayes Acura 24 modem	74
Hayes Acura 9696 fax modem	249
Hayes Acura 144 fax modem	299

## Supra Corporation®

SupraFAX Modem Plus	149
SupraFAX Modem V.32	299
SupraFAX Modem V.32 144	339

## MacWEEK "every-other-week"

Look for MacNews Ads every-other-week. We've  
cut the costly expense of advertising in every issue -  
and passed the savings directly on to you. Just check  
our prices and look for us "every-other-week"!

# Mac News

1555 SHERMAN AVENUE

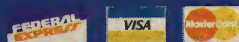
SUITE 361 • EVANSTON, IL 60201

MacNews Sales Hours: M-TH 8am-7pm; Fri til 6pm (CT) Sat 10am-2pm

## 1-800-723-7744

24hr Fax 312-871-4556 • International Orders Welcomed

Apple/Mac are trademarks of Apple Computer. Prices subject to change without notice. All returned orders may be subject to a minimum 15% restocking fee plus return shipping. Call for manufacturers' RMA before returning. All warranties on Macintosh or Apple  
brand products sold by MacNews will be honored by MacNews or its authorized agents only. All other manufacturer's warranties still apply.





# TELL US YOUR NEEDS...

**FREE – Through May – All orders over \$350...**

## PRINTERS



**\$1195**

TI MicroLaser Plus

### Texas Instruments

MicroLaser PS17/AppleTalk .....	1,165
MicroLaser PS35/AppleTalk .....	1,299
MicroLaser Turbo .....	1,659

### Lexmark IBM

LaserPrinter 6P .....	1,549
LaserPrinter 6A .....	1,729
LaserPrinter 10L .....	1,719
LaserPrinter 10A .....	2,219

## NEC

SilentWriter Model 95F . 1,495

## Panasonic

Postscript KX-P4455 ..... 1,979



**\$1495**

NEC SilentWriter Model 95F

## Printers Supplies:

NEC Printer 95 Toner .....	184
Panasonic 4455 Toner .....	39
TI Printer Toner Kit .....	42
Lexmark Printer Toner .....	169

## Hewlett Packard Supplies:

Toner Cart. 3500Pg IIP, IIP+, IIP .....	75
Toner Cart. 4000pg II, IID, III, IIID .....	97. <sup>50</sup>
Toner Cart. 8000pg IIIsi .....	131. <sup>25</sup>
Black Microfine Toner Cart. 4.4M ....	115
For All HP InkJet Printers/Fax	
Black INK Cart. 1000pg .....	27. <sup>50</sup>
3 Color INK Cart. ....	30
Black INK Cart. 500pg Water Resist. ....	18. <sup>50</sup>



## COSTAR CORP.

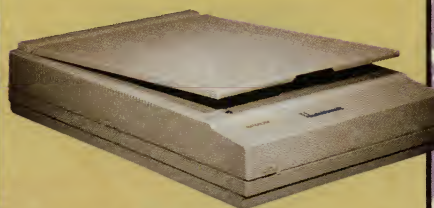
LabelWriter II .....	185
LabelWriter II Plus .....	229
AddressExpress .....	689
AddressWriter .....	339
Stingray .....	89

CoSTAR LabelWriter II

**\$185**

We also stock LabelWriter II and LabelWriter II Plus labels. Please call us for best pricing and quantity discounts.

## SCANNERS Microtek



**\$889**

ScanMaker II

ScanMaker II Color .....	889
Scan Maker IIIE Color .....	1,179

## UMAX®



**\$879**

ScanOffice ..... 879

UMAX OA-1 600 dpi (interpolated to 1200 dpi), 256 gray scale scanner. The total scanning solution for the office.

UC630 600 Dpi Color ..... 1,159

UC840 ..... 1,369

UC120 1200 Dpi Color ..... 3,220

The UMAX UC840 captures 16.8 million colors with a variable scanning resolution from one to 800 dots per inch. The UC840 merges award-winning technology with state-of-the-art craftsmanship, presenting crisp and clear images.

Auto Document Feeder 300DPI ..... 439

Auto Document Feeder 600DPI ..... 439

Transparency Adapter UC840 ..... 730

## Video Products

Rasterops 24STV Video Display Brd . 789

Video Spigot NuBus ..... 469

Video Spigot IIsi ..... 379

Video Spigot LC ..... 399

Video Spigot Pro NuBus ..... 1,369

Video Spigot Pro IIsi ..... 1,285

Supernac Spectrum 24 Series IV .... 839

Supernac Spectrum 24 PDQ ..... 1,549

Thunderstorm PRO ..... 2,889

## MODEMS

## DOVE COMPUTER CORP



DoveFax PB ..... 99

The DoveFax PB features a 9600 bps send/4800 bps receive Group III fax modem and a 2400 bps Hayes compatible data modem for the PowerBook.



DoveFax Pro + V ..... 489

The DoveFax Pro+ Voice features a 14.4 kbps send/receive personal fax machine, a 14.4 kbps data modem plus a voice answering system for your Macintosh.

DoveFax 144E ..... 299

The Dove Fax 1443 is an external Group III S/R fax modem with fax software and 14.4 kbps modem with v.42bis.

## CYPRESS

FaxPro II 9600 Fax Network ..... 629

FaxPro II 14.4 Fax Network ..... 729

## HAYES

Accura 2400 Data ..... 95

Accura 9600 Data/Fax ..... 247

Accura 14.4 Data/Fax ..... 329

## PSI

Power Modem for PB 24/96/48 ..... 188

Power Modem III for PB 96/96 ..... 325

Power Modem IV for PB 14.4 ..... 388

COM Station One 24/96/48 ..... 139

COM Station Four 96 ..... 329

COM Station Five 14.4 ..... 388

COM Staiton Network 24/96/48 ..... 189

# THE LLB COMPANY

300 - 120TH Ave. NE • Bldg 1, Suite 120 • Bellevue, WA 98005 • (206) 454-7258



# 1-800-848-8967

7:00 A.M. to 6:00 P.M. M-F • 9:00 A.M. to 4:00 P.M. Sat. • Pacific Standard Time



# GET THE BEST SOLUTION

...Get a **FREE Mouse Pad** for your Mac.

## MORE MODEMS

### Supra



**\$349**

Supra v.32bis S/R Fax

v.32bis S/R Fax 14.4	259
v.32bis S/R Fax 14.4w/cbl & SW	299
2400 Modem ONLY (NO CABLE)	69
Fax 2400/9600/9600	169
Supra V.32bis PowerBook 14.4	299

### Global Village

PowerPort Gld 14.4/96	409
PowerPort Silver 96	348
PowerPort Brnz 24/96	179
Teleport Gold 14.4/14.4	409
Teleport Silver 96	348
Teleport Bronze 24/96	179

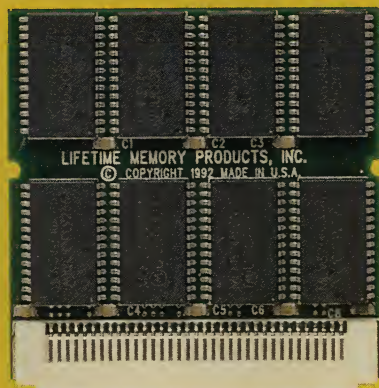
### Zoom Modems

AMX 2400 bps Modem	68
FXV 2400/9600 S/R Fax	139
VFXV 32 bis 14.400 fax	279

## POWERBOOK ACCESSORIES

Carrying cases Black/Blue/Teal	75
140/170/160/180 Replmnt Battery	65
External Battery Charger (PB100)	145
Battery Chgr (PB140/170/160/180)	89
Battery Charger/Battery (except 100)	
Bundle	145
Automobile Powerbook Adapter	69
CPU- Connectix Powerbook Utilities	45
Bookview/6Mb Bundle Imperial	799
PowerBook Installation Kit	7 <sup>50</sup>

## POWERBOOK SIMMS



4 MB Upgrade-  
PB DUO 210/230

**\$210**

8 MB Upgrade-  
PB DUO 210/230

**\$379**



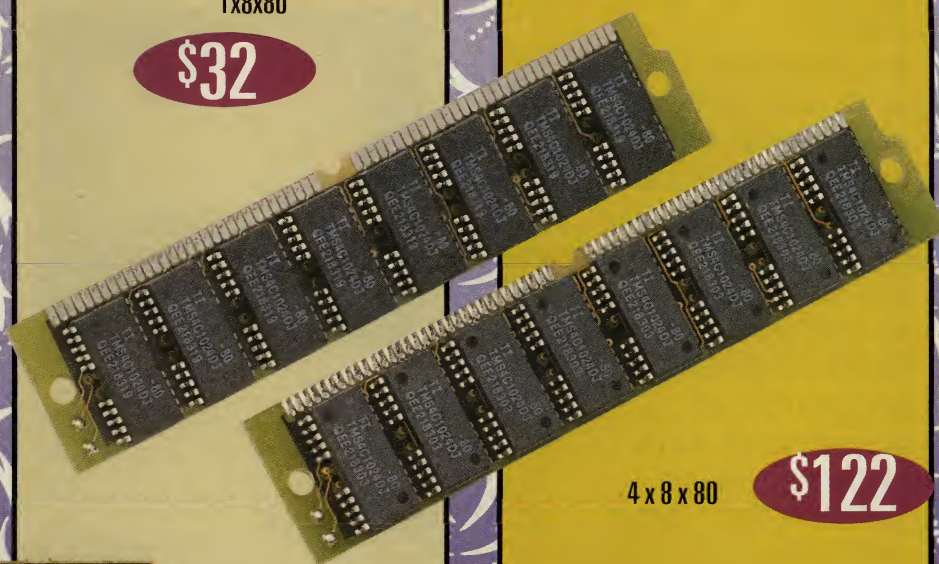
## POWERBOOK MEMORY

2 MB Upgrade- PB100/140/170	85
4 MB Upgrade- PB100	189
6 MB Upgrade- PB100	229
4 MB Upgrade- PB140/170	159
6 MB Upgrade- PB140/170	219
4 MB Upgrade- PB160/180	189
6 MB Upgrade- PB 160/180	245
8 MB Upgrade- PB 160/180	359
10 MB Upgrade- PB 160/180	419
4MB Upgrade PB165C	209
6 MB Upgrdae PB165C	299
8 MB Upgrdae PB165C	399
10 MB Upgrdae PB165C	549
4 MB Upgrade - PBDOU 210/230	210
6 MB Upgrade - PBDOU 210/230	289
8 MB Upgrade - PBDOU 210/230	379
10 MB Upgrade - PBDOU 210/230	475

## SIMMS FOR EVERY MAC

1x8x80

**\$32**



4 x 8 x 80

**\$122**

1x8x80	32
1x8x70	34
1x8x60	37
1x8x100	30
1x8x80 (fx)	34
1x8x70 (fx)	36
2x8x80	61
2x8x70	63
4x8x80	119
4x8x70	121
4x8x80 (fx)	124
4x8x70 (fx)	126
4x8x80 (II/IIX)	129
4x8x70 (II/IIX)	131
8x8x80	299
8x8x80 (fx)	299
16x8x80 (High Profile)	515
16x8x80 (Low Profile)	579
16x8x80 (fx)	539
1x9x70 (PC)	40
4x9x70 (PC)	145
Mac Portable 3MB	410
Mac Portable 4MB	449

## MEMORY UPGRADE Centris & LCIII - 70ns

4MB -70ns	125
8MB -70ns	259
16MB-70ns	559

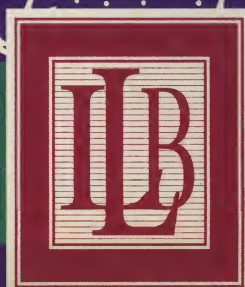
## Quadra 800 - 60ns

4MB -60ns	130
8MB -60ns	279
16MB -60ns	699
32MB -60ns	2219

**NEW!!**

# THE LLB COMPANY

300 - 120TH Ave. NE • Bldg 1, Suite 120 • Bellevue, WA 98005 • (206) 454-7258



# 1-800-848-8967

7:00 A.M. to 6:00 P.M. M-F • 9:00 A.M. to 4:00 P.M. Sat. • Pacific Standard Time



# ORDER TODAY...

**FREE – Through May – All orders over \$350...**

## NETWORKING

### ASANTÉ

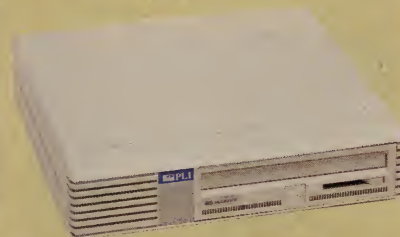
MC 3NB-MAC II TH/TN/10-T 64K .....	239
MC + IIE64-MAC II TH/TN 64K .....	148
MC + IIE64-MAC II TH/10-T 64K .....	148
MC3IISI-SI/SE30 TH/TN/10-T 64K .....	249
MC3IISIMC-SI TH/TN/10-T 64K .....	194
MC + 30IE-SI/SE30 TH/TN 16K .....	169
MC + 30IET-SI/SE30 TH/10-T 16K .....	179
MC + 30IETMC64-SI/TH/10-T 64K FPU 244	
FNISI10T-SI/SE30 FRNDLYNT/10-T16K 249	
MCLC10TII-LC/LCII 10-T .....	169
MCLCTNMCI-LC/LCII THIN FPU .....	289
MC + SEET-SE TH/10-T 32K .....	169
EN/SC-SCSI TH/TN/10-T W/CABLE .....	309
EN/SCPB-SCSIPB TH/TN/10-T W/CABLE 349	
EN/SC10T-SCSI 10-T W/CABLE .....	238
EN/SC10TPB-SCSIPB 10-T W/CABLE ...	288
FNTNA-FRIENDLY NET THIN .....	69
FNTKA-FRIENDLY NET THICK .....	69
FN10TA-FRIENDLY NET 10-T .....	69
10THUB/12-10 BASE T HUB W/12 10T 478	
10THUB/8-10 BASE T HUB 1/8 10T .....	238
AH1704-HUB 1012&VIEW/MAC 2.0 .1,349	
10TMAU-10-T MAU .....	84

## Dayna - Mac/Ethernet



EtherPrint .....	334
EtherPrint-T .....	349
EtherPrint Plus .....	438
EtherPrint Plus-T .....	449
SCSI/Link .....	272
SCSI/Link-T .....	272
SCSI/Link-3 .....	299
DaynaPORT E/II-64k .....	148
DaynaPORT E/II-T-64k .....	148
DaynaPORT E/II-3-64k .....	198
DaynaPORT E/LC .....	148
DaynaPORT E/LC-T .....	148
DaynaPORT E/Z .....	264
DaynaPORT E/Z-T .....	264
DaynaPORT E/TRX .....	69
DaynaPORT E/TRX-T .....	69
DaynaSTAR MiniHub .....	242

## PLI DRIVES



PLI Infinity 88 Turbo **\$619**

PLI Super Floppy .....	319
Infinity Floptical 21 MB .....	369
Infinity 40 Turbo .....	495
Infinity 88 Turbo .....	619
Infinity 88RW44 .....	669



PLI Multi-Session CD-ROM **\$689**

PLI Multi-Session CD-ROM .....	689
PLI 3.5" 128 Optical (Sony) .....	1,259
PLI 650 MB Optical .....	2,419
PLI MaxOptical 1GB .....	3,449



PLI 85 MB Turbo External Hard Drive **\$439**

85MB Turbo External .....	439
170 MB Turbo External .....	519
212 MB Turbo External* .....	629
425 MB Turbo External* .....	1,339
520 MB Turbo External* .....	1,409
1 GB Turbo External* .....	1,889
Quick SCSI NuBus Card .....	359
*Quick SCSI will increase the performance of these drives	
212MB Internal Drive .....	489
425MB Internal Drive .....	1,129
1000MB Internal Drive .....	1,739

## PINNACLE MICRO



650MB Optical Drive .....	2,875
PMO 130 .....	1,589
Recordable CD-ROM Drive .....	3,895
Recordable CD-ROM Gold Disc .....	36

## BERNOULLI

150Mb Transportable Drive .....	949
150Mb Internal Drive Q900/950 .....	819

## VERBATIM MEDIA



**\$16**

Datalife Mini Cartridge—  
Starting at . . .

Datalife 3-1/2" Micro disks	
09900 2S2D Qty. 10 .....	8 <sup>90</sup>
87573 2SHD Qty. 10 .....	13 <sup>80</sup>
Verbatim Brand Optical Disks	
3-1/2 Rewritable 512 B/S .....	45
5-1/4" Rewritable 512 B/S .....	139
5-1/4" Rewritable 1024 B/S .....	139

Datalife 8mm/4mm	
Computer Grade Data Cartridges	
8MM DC 112Meters/367 Feet .....	12 <sup>90</sup>
4MM DC 90Meters/295 Feet .....	16 <sup>90</sup>
4MM DC 50 Meters/197 Feet .....	13 <sup>90</sup>

Datalife Mini Cartridges	
DC2000 Formatted w/QIC 40 Format ..	16
DC2080 Formatted w/QIC 80 Format ..	19
DC2120 Formatted w/QIC 80 Format ..	21

## COMPARE OUR SHIPPING PRICES

AIRBORNE EXPRESS OVER NIGHT **\$6** AND UP • UPS GROUND **\$5** AND UP

Orders received before 7:30 PM Eastern time weekdays ship the same day. • We export to most countries in the world. 2-3 days delivery to most countries. • Prices subject to change. Quantity pricing for dealers. • All returns require approval and are subject to a restocking fee.

American Express, Visa, MasterCard, & Discover Cards gladly accepted.

Your card is not charged until the order is shipped.

**FAX YOUR ORDER 24 HOURS A DAY (206) 454-7302**

# THE LLB COMPANY

300 - 120TH Ave. NE • Bldg 1, Suite 120 • Bellevue, WA 98005 • (206) 454-7258



# 1-800-848-8967

7:00 A.M. to 6:00 P.M. M-F • 9:00 A.M. to 4:00 P.M. Sat. • Pacific Standard Time



# GET IT TOMORROW!

...Get a **FREE** Mouse Pad for your Mac.

## MORE REMOVABLE MEDIA



SyQuest 44MB Cartridge	<b>\$63</b>
SyQuest 44MB Cartridge .....	63
SyQuest 44MB Cart. Pre-Formatted .....	69
SyQuest 44MB W/DIVA Software .....	69
SyQuest 88MB Cartridge .....	99
SyQuest 88MB Cart. Pre-Formatted ...	107
Optical Cart/Verbatim (Single) 256MB	95
Optical Cart/Verbatim (Single) 128MB	45
Optical Cart/Komag (Single) 128MB ..	45
Bernoulli 40MB Cartridge (3 Pack) ..	285
Bernoulli 90MB Cartridge (3 Pack) ..	435
Bernoulli 150MB Cartridge Single ...	155
Bernoulli 150MB Cartridge 5 Pack ....	499
Floptical Disc 21 MB .....	24

## FWB, INC.



PocketHammer 120 MB Portable .....	689
PocketHammer 170 MB Portable .....	749
PocketHammer 240 MB Portable .....	769
hammer240is .....	599
hammerDisk130 Optical .....	1,509
hammerDisk44 .....	669
hammerDisk88 .....	769
hammerPB120 .....	569

## MASS Microsystems



### DiamondDrive™ External Hard Drives

Diamond Drive high performance hard drives give you the ultimate high capacity storage solutions at an affordable price.

120 MB .....	439
210 MB .....	529
510 MB .....	1,279
1000 MB .....	1,979
1800 MB .....	2,619

**\$639**



**\$669**

HitchHiker for the PowerBook

### HitchHiker™ Ultra-Compact Hard Drives

Pocket size external enclosure, platinum color. Weighs less than 10 ounces.

80 MB .....	539
120 MB .....	639
HitchHiker Drives for the PowerBook	
80 MB .....	569
120 MB .....	669
DataPak External SyQuest Drives	
44 MB .....	499
88 MB (R/W 44 MB) .....	639
DataPak External Magneto-Optical Drives	
128 MB .....	1,257
650 MB .....	3,019

### DataPak CD-ROM Drive

Zero-footprint enclosure, system cable, external active terminator, Audio CD software, CD Caddy.

CD ROM - MultiSession .....

### MassMicro Internal Hard Drives

120Mb .....	309
510Mb .....	1,159
1000 Mb .....	1,779

## LB INDUSTRIES



Wristsaver: .....	12
Wristwaver Mousepad .....	12
Wristsaver/Mousepad bundle .....	20

Your choice of Royal Blue, Red, Black, Gray, Navy

## MAC NEEDS

SIMMs Installation Toolkit .....	8
SIMM Remover .....	3
Maxima 2.0 .....	44
Optima / 32 .....	149
Virtual 3.0 .....	139
LC Video-RAM 512K .....	50
Quadra Video RAM (256K-80ns) .....	31
Mac 101 Keyboard .....	120
Kensington Turbo Mouse .....	106
LC/Classic 16mhz Math CoProcessor	59
Twinslot LC .....	239
TechWorks Cache Card IICI .....	145
Tech Works IIsi PDS Adaptor (20MHz)	95

## MONITORS

## SONY

Sony 1430 14" MultiScan .....	669
Sony 16 04s 17" Multiscan .....	1,149
Sony GDM 2036S 20" Multiscan ..	2,299

## ACCELERATORS

New Life Classic (16MHz) .....	569
Quadra Overdrive for Quadra 900 ...	239
Novy Quick 30 Mac Plus (25MHz) ...	525
Novy Quick 30 Mac SE (25MHz) .....	525

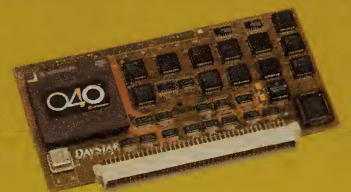
## DAYSTAR DIGITAL



### Universal PowerCache

The PowerCache is an award winning design that gives you affordable 68030 performance and the best in compatibility. Just plug it in and go... no downtime and it works with everything.

33MHz/33MHz w/FPU .....	375/465
40MHz/40MHz w/FPU .....	545/635
50MHz/50MHz w/FPU .....	715/845
Adaptor (All Mac LC and II's, PDS) .....	41
Adaptor (Mac SE and Classic) .....	85
Combocache IIsi / w/FPU .....	219/299
Equalizer LC / w/FPU .....	169/239
DualPort IIsi w/20MHz FPU .....	165



### NEW! Turbo 040 Accelerators

Get the maximum in 68040 acceleration with all the compatibility of the PowerCache. The effective way to increase your productivity up to four times as fast! Optional 128k cache boosts performance another 4-50%.

25 MHz Turbo 040 .....	1,129
33MHz Turbo 040 .....	1,389
FastCache Turbo 25 .....	259
FastCache Turbo 33 .....	345
FastCache IIsi / w/FPU .....	279/349
FastCache IICI .....	199
FastCache Quadra 700/900 .....	249
FastCache Quadra 700/900/950 .....	375
RAM Power Card .....	429
Charger .....	819
SCSI Power Card .....	689

**DAYSTAR**  
DIGITAL

# THE LLB COMPANY

300 - 120TH Ave. NE • Bldg 1, Suite 120 • Bellevue, WA 98005 • (206) 454-7258



# 1-800-848-8967

7:00 A.M. to 6:00 P.M. M-F • 9:00 A.M. to 4:00 P.M. Sat. • Pacific Standard Time



# TECHWORKS™



TECHWORKS OFFERS AN EXTENSIVE LINE-UP OF MACINTOSH PERFORMANCE ENHANCEMENT PRODUCTS. EACH PRODUCT, LIKE A GREAT WORK OF ART, IS BUILT TO STAND THE TEST OF TIME. SEE YOUR MAC AND YOUR FAVORITE SOFTWARE PERFORM ITS BEST. INVEST IN TECHWORKS PERFORMANCE ENHANCEMENTS.

## MACINTOSH ACCELERATORS

PUT YOUR MAC IN HIGH GEAR WITH TECHWORKS ACCELERATOR CARDS. AVAILABLE IN 25MHZ, 33MHZ AND 40MHZ SPEEDS.

## MEMORY & VIDEO RAM

UPGRADE YOUR MAC TO THE MAX WITH TECHWORKS MEMORY AND VRAM KITS. MORE COLOR POWER FOR YOUR LC, FASTER COLOR FOR YOUR QUADRA!

## CACHE CARDS & FPUS

SATISFY YOUR NEED FOR SPEED WITH TECHWORKS CACHE CARDS AND FPUS.

## POWERBOOK & DUO MEMORY

**FREE**

CONNECTIX POWERBOOK UTILITIES WITH ANY TECHWORKS POWERRAM MEMORY PURCHASE. A \$129 VALUE.

## PERFORMANCE PRODUCTS

MAC MODEL	MEMORY MODULES (MEGABYTES)												ACCELERATORS		
	1	2	3	4	6	8	10	12	16	20	32	25MHz	33MHz	40MHz	
MACINTOSH PLUS	•														
MACINTOSH SE	•											•		•	
MACINTOSH SE/30	•			•											
MACINTOSH II	•			•								•	•		
MACINTOSH IIX	•			•								•	•		
MACINTOSH IICX	•			•								•	•		
MACINTOSH IICI	•	•		•		•			•			•	•		
MAC CLASSIC	•		•									•		•	
CLASSIC II, LC, LCII	•	•		•								•		•	
COLOR CLASSIC	•	•		•								•		•	
MAC LC III				•		•			•		•	•			
MACINTOSH IISI	•	•		•		•			•			•	•	•	
MACINTOSH IIFX	•			•		•			•			•	•		
LASERWRITER IINTX	•														
TI MICROLASER	•														
HP LASERJET	•	•		•											
QUADRA 700	•			•											
QUADRA 900, 950	•	•		•		•			•						
QUADRA 800				•		•			•		•				
CENTRIS 610,650				•		•			•		•				
POWERBOOK 100		•		•	•										
140/145/170		•		•	•										
160/180/165C		•		•	•	• <sup>1</sup>	•								
DUO SERIES		•		•	•	•		•		•					
												FREE	CONNECTIX CPU WITH POWERRAM PURCHASE		

**FREE** CONNECTIX CPU WITH POWERRAM PURCHASE

### CARDS

\*165C DOES NOT COME IN 10MB SIZE

MACINTOSH LC	512K VRAM • LC FPU
MACINTOSH IISI	ADAPTER CARD • ADAPTER CARD WITH FPU
QUADRA 700/900/950	256K VRAM
MACINTOSH IICI/IISI	CACHE CARD

### TECHWORKS ACCELERATOR SPEEDS

	8 MHZ	16 MHZ	40 MHZ	25 MHZ
MAC SE/25 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		040
MAC SE/40 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		
CLASSIC/25 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		
CLASSIC/40 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		
LC, LCII/25 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		
NUBUS/25 MHZ	WITHOUT ACCELERATOR	WITH ACCELERATOR		

## OUTRAGEOUS SUPPORT!

THE BEST IN THE BUSINESS! NO QUESTION ABOUT IT!  
LIFETIME WARRANTY  
30-DAY MONEY BACK GUARANTEE  
TOLL-FREE SUPPORT  
24-HOUR REPLACEMENT  
GET THE PICTURE?

CORPORATE PO'S ACCEPTED, ALL MAJOR CREDIT CARDS HONORED AND VOLUME DISCOUNTS ARE AVAILABLE. FAX ORDERS: 512-794-8520  
TECHWORKS: 4030 BRAKER LANE WEST, SUITE 350; AUSTIN, TX 78759  
BUSINESS LINE: 512-794-8533; TECHNICAL SUPPORT: 800-933-6113  
TECHWORKS IS A TRADEMARK BELONGING TO TECHNOLOGY WORKS, INC.  
ALL OTHER TRADEMARKS MENTIONED BELONG TO THEIR RESPECTIVE OWNERS.

CALL FOR  
**FREE**  
GUIDE

**800-765-9864**



# MarketCenter

THE SOURCE FOR DIRECT BUYERS OF MACINTOSH PRODUCTS, SERVICES AND INFORMATION

## Hardware/Boards

### THE Chip MERCHANT

How Can Anyone  
Afford Not To  
Compare Our  
PRICES?

#### MAC 8 BIT SIMMS

1 x 8-80 Simm	\$29.50
2 x 8-70 Simm	\$58.00
4 x 8-70 Simm	\$121.00
8 x 8-70 Simm	\$289.00
16 x 8-70 Simm	\$499.00
8 x 8-70 Q700	\$295.00
16 x 8-70 Q700	\$525.00
4 x 8-80 w/PAL	\$125.00
1 x 8 FX	\$29.50
4 x 8 FX	\$120.00
16 x 8 FX	\$489.00

#### MAC FPU's

68882-25 (LC3)	\$55.00
68882-33 (Duo Dock)	\$65.00

#### MAC VIDEO

256K-80 VRAM	\$22.00
256K-100 VRAM	\$17.00
512K-80 VRAM	\$30.00
4 to 8-Bit VRAM Sets	\$15.00

#### MAC 32 BIT SIMMS

(LC III, CENTRIS, QUADRA 800)	
1 x 32-80/60 (4MB Simm)	\$99/\$140
2 x 32-80/60 (8MB Simm)	\$223/\$265
4 x 32-80 (16MB Simm)	\$499

#### POWERBOOKS MEMORY

PB 100	6MB	\$239.00
PB 140, 145, 170	2MB	\$70.00
	6MB	\$199.00
PB 160, 180	4MB	\$219.00
	6MB	\$309.00
	8MB	\$338.00
	10MB	\$430.00
PB 165 C	4MB	\$245.00
	6MB	\$325.00
	8MB	\$389.00
	10MB	\$480.00
DUO 210, 230	8MB	\$309.00
	14MB	\$719.00
PB/DUO Install Kit		\$9.50

#### PRINTER MEMORY

HP LASERJET	PANASONIC
OKILASER	TI MICROLASER

**LIFETIME WARRANTY** on most products. Other chips available. Prices reflect 3% cash discount. U.S. Government and University PO's accepted. Fax # 619-268-0874. We buy 512K, 256K (2-chip), 1 MB, & 4MB SIMMS. Call Heidi ext. 7.

**ORDERS (800) 426-6375**

**INFORMATION (619) 268-4774**

9541 Ridgehaven Ct., San Diego, CA 92123

Prices subject to change without notice.

## FPU/PMMU/CPU

**68040 RC25**  
FPU for  
**Centris 610/650**  
\$375

**Mac LC, LCII, Classic II Math Card w/882**  
16MHz \$49 20MHz \$59 25MHz \$69 50MHz \$79

**Mac IIsi Dual Slot Card w/882** ..... \$119

**68882 FPU Chip** 16MHz \$49 20MHz \$53

25MHz \$55 33MHz \$65 40MHz \$99 50MHz \$119

**68851 PMMU for Mac II (MODE32 free)** ... \$79

**256K VRAM for Quadra/Centris/LC III** .... \$27

**SONNET TECHNOLOGIES, INC.**  
18004 Sky Park Circle 260 Irvine, CA 92714  
714-261-2800 Fax: 714-261-2461

**1-800-945-3668**

Visa/MC; Gov't./Corp./Educ. P.O.; Dirs. Call

## MEMORY 800-238-9415

#### POWERBOOK:

100/140/145/170/160/165/180

4Mb - \$180. 6Mb - \$250. 8Mb - \$310. 10Mb - \$390

**DUO 210/230:**

4Mb - \$180. 6Mb - \$260. 8Mb - \$320. 10Mb - \$410

**MAC SIMMS (70ns.):**

1x8 - \$32. 4x8 - \$124. 16Mb - \$495

Centris 610/650, Quadra 800, LCIII

4MB - \$145. 8Mb - \$260

**LOGICAL CONNECTION®**

**Tell your source!**

I found it in **MacWEEK**  
**MarketCenter.**

## INDEX

### 109 Hardware

Boards  
Communications/  
Networking  
Computer Systems  
Peripherals  
Used Equipment

### 123 Software

Bar Coding  
Business Management  
Communications/  
Networking  
Desktop Publishing  
Education  
Finance  
General  
Graphics  
Multimedia

### 124 Services

General  
Graphics  
Programming/Consulting  
Rental/Leasing  
Repair/Recovery Services  
Toner Recharging  
Training

### 125 CD Rom

### 126 Accessories

### 126 Career Opportunities

**INFO. 800-825-4ADS**

Ziff-Davis Publishing Company  
MacWeek MarketCenter, 3rd Floor  
One Park Avenue  
New York, NY 10016

Paul Stafford  
Vice President, Central Advertising

Paul A. Fusco  
Director of Sales

Southwest - AZ, CA (213, 310, 619,  
714, 805, 818, 909), CO, NM, UT

**Juan Cail (212) 503-5145**

Account Representative

**Chris Thomas (212) 503-5131**

Account Manager

East Coast - CT, DC, DE, FL, GA, MA,  
MD, ME, NC, NH, NJ, NY, PA, RI, SC,  
VA, VT, WV

**Manny Fuentes (212) 503-5865**

Account Representative

**Tom Koletas (212) 503-5136**

Account Manager

Northwest - AK, CA (209, 408, 415,  
510, 707, 916), HI, ID, MT, ND, NV,  
OR, WA, WY

**Tom Lee (212) 503-5327**

Account Representative

Midwest - AL, AR, IA, IL, IN, KS, KY, LA,  
MI, MN, MO, MS, NE, OH, OK, SD,  
TN, TX, WI, and Foreign

**Jo Zottarelli (212) 503-5122**

Sr. Account Representative

### MEMORY UPGRADES AT COMPETITIVE PRICES

- 1 MB, 2 MB, 4 MB Upgrades for Macintosh Models
- 4 MB, 8 MB, 16 MB Upgrades Available for Centris, LC III, Quadra 700/750/800/900/950
- Trade-in Modules Purchased
- Government and University Orders Welcomed
- Worldwide Orders Accepted
- OEM Pricing Offered

#### DELTA LU RESEARCH LABS

26802 Vista Terrace Drive, Lake Forest, CA 92630

**CALL TODAY: (800) 6DELTA-LU (714) 588-6395**

### Upgrades for your Mac

Mac2VGA cable	\$20
ADB Extended Keyboard	\$97
Relisys 14" color monitor	\$329

### 68030s FROM ONLY \$299!

Choose between the 25MHz '030 MicroMac MultiSpeed for only \$299 or the 32MHz '030 MicroMac MultiSpeed for only \$398 to increase the speed of your Plus or SE up to 800%.

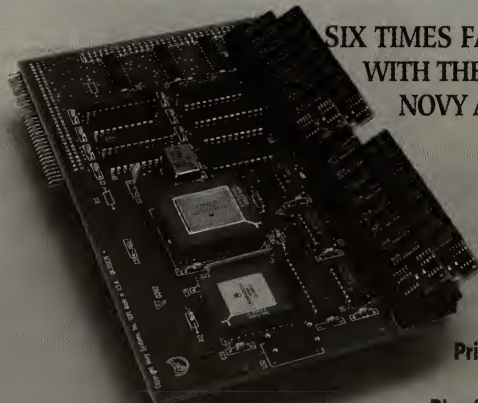
**MacUpgrade Specialists (800) 266-3622**  
Fax: 714.362.5428

Let **MacWEEK MarketCenter** take your product to the decision-making buyers inside business, government, and education.

Call your Account Representative at:

**212-503-5115 or 800-825-4237**

## JUICE UP YOUR MAC!



**SIX TIMES FASTER  
WITH THE 25 MHz  
NOVY ACCELERATOR**

**Prices Start at \$395.  
Mac SE, Classic,  
Plus & 512KE Versions.**

Jet-juice is the only description that fits. Novy accelerator boards deliver more speed at comparable MHz than theirs do. Proven reliability.

▼ Motorola 68030 processor/optional math co-processor ▼ SIMM sockets for extra memory ▼ Speeds of 16, 25, & 33 MHz ▼ FREE dealer installation ▼ 30 day-money-back guarantee

**For Jet Propulsion Call 1-800-638-4784**

**QUIK30™**

Novy Systems, Inc. • 107 E. Palm Way, Suite 14 • Edgewater, Florida 32132 • Fax 904-428-0765



# It's Jungle Out There.

## MEMORY DIRECT IS YOUR SAFETY ZONE.

### MEMORY

#### MAC MEMORY

1x8 - 80NS	\$29
1x8 - 70NS	\$31
2x8 - 70NS	\$60
4x8 - 80NS	\$123
4x8 - 70NS	\$124
4x8 - 80 FX	\$127
4x8 - 80 II/IIx	\$129
8x8 - 80NS	\$269
16x8 - 80	\$489

72PIN MODULE	Centris/LC III	Quadra 800
4MEG	\$119	\$139
8MEG	\$239	\$279
16MEG	\$539	\$699

### POWERBOOK

#### PowerBook Memory

2mg 140/170 memory module	\$ 99
4mg 140/170 memory module	\$169
6mg 140/170 memory module	\$219
4mg 160/180 memory module	\$199
6mg 160/180 memory module	\$275
8mg 160/180 memory module	\$349
10mg 160/180 memory module	\$429
4mg DUO 210/230 memory module	\$199
8mg DUO 210/230 memory module	\$329

#### Global Village PowerPort Modems

Bronze (24/96 S/R fax/mdm)	\$189
Silver (94/96 S/R fax/mdm)	\$369
Gold (14,400 S/R fax/mdm)	\$429

#### PSI PowerModems

PSI PowerModem I (24/96/48 S/R fax modem)	\$159
PSI PowerModem III (96/96 S/R fax modem)	\$349
PSI PowerModem IV (14.4/14.4S/R fax modem)	\$409

### Syquest Cartridges

#### 44MB-\$62 88MB-\$96

#### Memory Direct Removable Drives

Memory Direct 44mb External (SQ555)	\$395
Memory Direct 44mb Internal	\$355
Memory Direct 88mb External (SQ5110)	\$499
Memory Direct 88mb Internal	\$479
Memory Direct 88c External (SQ5110C)*	\$599
Memory Direct 88c Internal*	\$569

\*Your Memory Direct 88c will read and write, but not format, 44 mb cartridges.

### REMOVEABLES

### RASTEROPS

#### Graphic Cards

RasterOps 24XTV	\$2519
RasterOps 24XLI	\$2059
RasterOps 24	\$1649
RasterOps paintboard Li	\$849
RasterOps 8XLI	\$999

#### Displays

21" Color	\$2999
20" Color Multimode	\$2075
20" Color Multiscan Trinitron	\$2925

### HARD DRIVES

#### Fujitsu

Fujitsu drives carry a FIVE Year Warranty.

					External
425MB	M2623FA 3.5" HH	9ms	\$839	\$899	
520MB	M2624FA 3.5" HH	9ms	\$899	\$959	
1.2GIG	M2266 5.25" FH	14ms	\$1379	\$1479	
2.0GIG	M2652 5.25" FH	14ms	\$2289	\$2389	
2.4GIG	M2654 5.25" FH	11ms	\$2489	\$2599	

#### Conner

Conner drives carry a ONE Year Warranty.

85MB	CP30080E3.5" LP	17ms	\$209	\$269
170MB	CP30170E3.5" LP	17ms	\$299	\$359
212MB	CP30200 3.5" LP	12ms	\$379	\$439
520MB	CP30540 3.5" HH	10ms	\$909	\$969

#### Quantum

ELS, LPS, PRO drives have a TWO Year Warranty  
Go-drives have ONE Year Warranty

42MB	ELS42	19ms	\$175	\$235
85MB	ELS85	17ms	\$205	\$265
127MB	ELS127	17ms	\$279	\$339
170MB	ELS170	17ms	\$309	\$369
240MB	LPS240	10ms	\$409	\$469
425MB	PRO425	9ms	\$879	\$939
525MB	LPS525	10ms	\$909	\$969
700MB	PRO700	10ms	\$1189	\$1249
1.0GIG	PRO1050	10ms	\$1349	\$1409
1.2GIG	PRO1225	10ms	\$1549	\$1609

#### PowerBook Hard Drives

80MB Go•Quantum Hard Drive	17ms	\$325	\$425
120MB Go•Quantum Hard Drive	17ms	\$439	\$539
160MB Go•Quantum Hard Drive	17ms	\$519	\$619

### HARD DRIVES

### Daystar Digital

Power Cache 33	\$386	\$461
Power Cache 40	\$549	\$629
Power Cache 50	\$719	\$849
25 Mhz Turbo 040		\$1129
33 Mhz Turbo 040		\$1349
FastCache Turbo 25		\$279
FastCache Turbo 33		\$349
ComboCache SI w/o math chip		\$219
with math chip		\$309
Equalizer LC w/o math chip		\$179
with math chip		\$249
Charger		\$815

### ACCELERATORS

### SUPER MAC

#### Displays

Super Match 21 Two-Page (9771)	\$2459
SuperMatch 20• New Trinitron (9751)	\$2459
SuperMatch 20•T Multimode Trinitron(9752)	\$2459
SuperMatch 20•TXL New Trinitron	\$2459
SuperMatch 17 Multimode (9730)	\$1159
SuperMatch 17•T Trinitron (9735)	\$1059
Platinum 21 Two-Page Display (9761)	\$999

#### Graphic Cards

ThunderStorm	\$825
Spectrum/24 Series IV	\$825
Spectrum/24 PDQ Plus	\$1525
Spectrum/8•24 PDQ NuBus or IIsi	\$825
Spectrum 8/Series IV	\$415

#### Quicktime Movie Making

VideoSpigot NuBus* / IIsi* / LC	\$379/339/259
Spigot & Sound NuBus*	\$489
VideoSpigot Pro NuBus* / IIsi**	\$1079/1239
Spigot & Sound Pro NuBus**	\$1079

\*FREE Adobe Premiere 2.0 LE  
\*\*FREE Adobe Premiere 2.0 Full Version

### External Drive Housings

Complete with SCSI Cable and Power Cord

Full Height	\$145	Half Height	\$85
-------------	-------	-------------	------

### UMAX

#### UMAX Scanners

UC-630 with Adobe PhotoShop™ v2.0.1	\$1099
UC-840 with Adobe PhotoShop™ v2.0.1	\$1299
UC-1200S with Adobe PhotoShop™ v2.0.1	\$2999

### NEC CD-ROMS

NEC CD Express (CDR-25)	\$405
NEC MultiSpin (CDR-74)	\$629

### NEC CD-ROM

#### PSI - ComStations

ComStation I (24/96/48 S/R fax modem)	\$139
ComStation IV(24/96/96 S/R fax modem)	\$359
ComStation V (14.4/14.4 S/R fax modem)	\$419

#### Global Village

TelePort (External Desktop Fax/Modems)	
Bronze (24/96 S/R fax modem)	\$199
Silver (96/96 S/R fax modem)	\$369
Gold (14,400 S/R fax modem)	\$429

### MODEMS

#### Mac SE (68000 PDS)

MC3SE - Thick/Thin/10BaseT,32K	\$209
MC+SEET Thick/10BaseT, 32K	\$159

#### SCSI Products

EN/SC10T 10BaseT, Includes SCSI Cable	\$249
EN/SCPBSCSI Cable w/HPDI-30 & DB-25 for PB	\$55
FriendlyNet Adapters (All models)	\$89

#### 10Base T Hubs

10THUB/12 10Bs T Hub w/12 10T, Thk/Thin Port	\$489
AH170112-pt Smt Hub w/SMNP H/W Module	\$909

#### EtherTalk to LocalTalk

AP1002 AsantePrint, Thk/Thin	\$329
AP 101 Asante Print, Thick/10BaseT	\$329

#### Mac II Family & Performa 600 (nuBus)

MC3NB Thick/Thin/10BaseT, 64K	\$209
MC+IIE64 Thick/Thin, 64K	\$159

#### Mac IIsi & SE/30 (68030 PDS)

MC 311S Thick/Thin/10BaseT, 64K, FPU Socket	\$209
MC+30IE64 Thick/Thin/64K, FPU Socket	\$159
LC/LCII/Performa 400 (68020, 68030 PDS)	
MC+LCII Thin/10Base T, FPU Socket	\$209

5 Year Warranty

### ASANTE PRODUCTS

# 800 486-2447

## OR FAX YOUR ORDER (714) 847-5043

7911 Professional Circle, Huntington Beach, CA 92648

7AM to 7PM Monday thru Friday  
9AM to 3PM Sat. - Same Day Shipping!

MasterCard • Visa • American Express • Discover

Corporate P.O.'s • Government P.O.'s • Educational P.O.'s  
Installation instructions & tools available for most products.  
Prices subject to change.





## DAYSTAR ACCELERATORS

CALL FOR GREAT PRICES!

### Memory for the new Macs!

	CENTRIS/LC III	QUADRA 800
4 Megabyte	123.00	135.00
8 Megabyte	249.00	263.00
16 Megabyte	549.00	699.00

### Standard SIMMs

	CALL FOR CURRENT PRICING ON ALL SPEEDS
1 Megabyte	
2 Megabyte	
4 Megabyte	
8 Megabyte	
16 Megabyte	

### Video RAM

4 Bit to 8 Bit Upgrade (Mac II/IIx cards)	24.00
256K Quadra 700/900 VDRAM	27.00
256K Quadra 950/Q800 VDRAM	31.00
256K Centris/LC III VDRAM	31.00
512K Mac LC VDRAM	49.00
512K Mac IIvx VDRAM	59.00

### PowerBook Memory

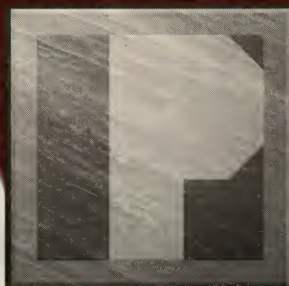
	PowerBook 100	140/170	160/180	165c	Duo 210/230
2 MB Module	79.00	79.00	—	—	—
4 MB Module	189.00	165.00	199.00	205.00	209.00
6 MB Module	249.00	249.00	289.00	299.00	—
8 MB Module	—	—	359.00	385.00	359.00
10 MB Module	—	—	439.00	CALL	—

### Miscellaneous

T.I. MicroLaser 1 MB	\$ 49.00
Virtual 3.0	99.00
Mac Classic 1 MB Bd	55.00
68851 16 Mhz PMMU	79.00
Mac Portable 3 Megabyte Card	425.00
NeXT Memory	CALL

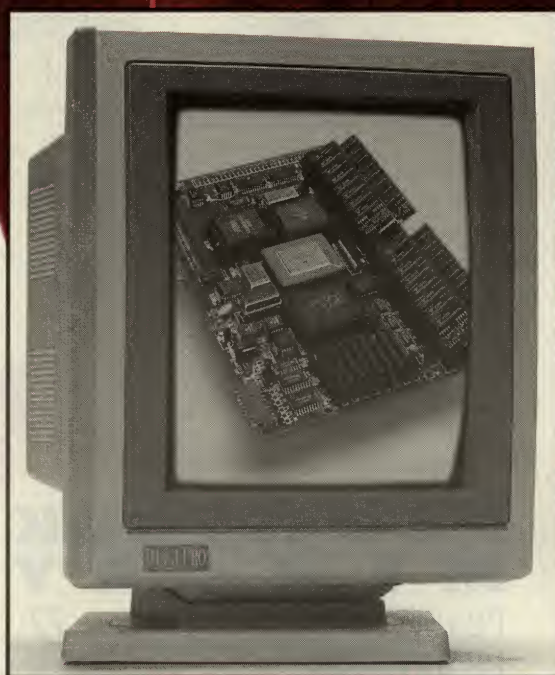
PRICES SUBJECT TO CHANGE AND AVAILABILITY.

**LIFETIME WARRANTY  
ON ALL MEMORY PRODUCTS**



# PERIPHERAL

**68030 ACCELERATOR  
AND 15" MONITOR COMBO**  
AS LOW AS **\$849.00**



**TOLL  
FREE  
TECH  
SUPPORT**

## 68030 SUPER-FAST Accelerators

"Quik30" for SE, Plus, 512Ke, Classic

- Speeds of up to 33MHz
- System 7/Virtual compatible
- Add up to 16 Megabytes of RAM
- Includes 68882 Math CoProcessor

**\$445.00**

for 25 Mhz SE version

"ImagePro" SE, Classic, Plus, 512Ke.

- 16, 25, 33, 40, 50Mhz speeds available

as low as  
**\$1160.00**  
with 19"  
monitor

- Works with your monitor or ours
- System 7/Virtual compatible.
- Add up to 16 Megabytes of RAM.
- Includes 68882 Math CoProcessor.
- Optional Display- 15, 19, or 24 inch.

## Ilisi Dual Slot Card w/68882 FPU \$119

### 68882 FPU Boards

20 Mhz for Macintosh LC	\$ 65.00
20 Mhz w/2 slots for Mac Ilisi	119.00
20 Mhz for Mac Classic II	65.00

### Cache Cards, Etc.

Ilisi 64K Cache Card	\$ 135.00
Ilci 64K Cache Card	125.00
Ilisi 2-slot Card and 68882	119.00

### FPU's (chip only)

	PGA-style*	PLCC-style**
68882 16 Mhz	\$ 55.00	59.00
68882 20 Mhz	59.00	65.00
68882 25 Mhz	79.00	79.00
68882 33 Mhz	119.00	89.00
68882 50 Mhz	149.00	—
68881 16 Mhz	45.00	—

\*PGA-style chips are ideal for upgrading Daystar and most other accelerator cards.

\*\*PLCC-style chips are used in Apple's newest Macs.

**800/256-6581**

**ORDER BY 6:30 PM CST  
FOR SAME DAY SHIPPING\***

\*some restrictions apply

**OVERNIGHT  
DELIVERY  
from \$8.00**

## PERIPHERAL OUTLET

327 East 14th, PO Box 2329 • Ada, Oklahoma 74820  
International Calls ☎ 405/332-6581 FAX ☎ 405/436-2245





# MAC Xtra is STAMPING OUT HIGH COSTS!

## MEMORY UPGRADES

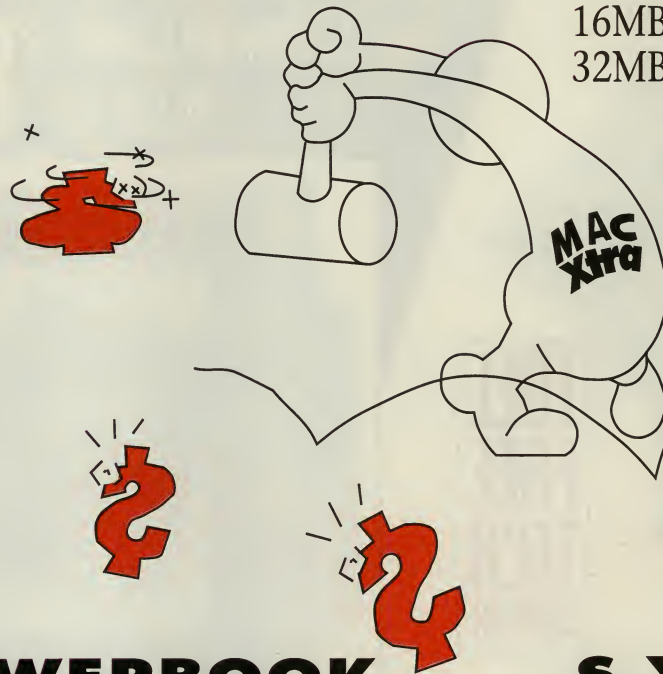
1x8x80 .....	30
1x8x70 .....	32
1x8x100 .....	28.50
2x8x80 .....	59.50
2x8x70 .....	61.00
4x8x80 .....	119
4x8x70 .....	121
4x8x80 II/II .....	127
4x8x70 II/IIx .....	129
8x8x80 .....	279
16x8x80 (High profile)...	503
16x8x70 (Low profile)....	555
1x8x80fx .....	32
1x8x70fx .....	34
4x8x80fx .....	124
4x8x70fx .....	126
8x8x80fx .....	279
16x8x80fx .....	529



512K VRAM.....	49
256K VRAM.....	27
1x9x70 .....	39.75
4x9x70 .....	135
TI Microlaser Upgrade .....	39
Tool Kit (Simms Inst.Kit)....	7
Tool Kit (PowerBook) ....	6.50

## 72-PIN SIMMS

4MB (70 NS) .....	120
8MB (70 NS) .....	249
16MB (70 NS) .....	549



## POWERBOOK MEMORY

PB100/140/170-2MB .....	72
PB100/4MB .....	179
PB100-6MB.....	259
PB140/170-4MB .....	159
PB140/170-6MB .....	210
PB160/180-4MB .....	195
PB160/180-6MB .....	239
PB160/180-8MB .....	349
PB160/180-10MB .....	409
PB165C/4MB .....	202
PB165C/6MB .....	294
PB165C/8MB .....	388
PB165C/10MB .....	504
PBDUO 210/230-4MB ....	199
PBDUO210/230-6MB ....	279
PBDUO210/230-8MB ....	349
PBDUO210/230-10MB ...	469

## QUADRA 800 60 NS

4MB (60 NS) .....	135
8MB (60 NS) .....	269
16MB (60 NS) .....	679
32MB (60 NS) .....	2099

## SYQUEST CARTRIDGES

SyQuest 44MB Cartridge ..	63
SyQuest 44/Preformatted ..	68
SyQuest 44/w/Diva .....	68
SyQuest 88MB Cartridge ..	99
SyQuest 88/Preformatted	105

## SHIPPING

Overnight Delivery: .....	\$7
UPS: .....	\$6

## International Orders

Phone: (206) 455-0786

Fax: (206) 455-3448

24 Hours a Day

# CALL: 1-800-553-4230

We accept MasterCard, VISA & Discover

Prices subject to change • Returns subject to approval and restocking fee

7:00 A.M. to 6:00 P.M. M-F • 9:00 A.M. to 4:00 P.M. Sat. • Pacific Standard Time

To enhance our identity and avoid confusion, MacEXPRESS is now MacXtra. We will honor all warranties given under our previous name.

1075 Bellevue Way N.E., Suite 114 Bellevue, WA 98004

Phone: (206) 455-0786 Fax: (206) 455-3448

MAC Xtra







# MEMORY PLUS

## Macintosh Enhancement Products

Price, Performance, Satisfaction Guaranteed

### SIMM's

1MX8-100ns.....	\$Call
1MX8-80ns.....	\$Call
1MX8fx-80ns.....	\$Call
2MX8-80ns.....	\$Call
4MX8-80ns.....	\$Call
4MX8fx-80ns.....	\$Call
4MX8-80ns w/Pal.	\$Call
8MX8-80ns.....	\$Call
16MX8-80ns HP...	\$Call
16MX8-80ns LP...	\$Call
16MX8fx-80ns.....	\$Call
Classic 1M/3M....	\$Call
New 72 Pin:	
4mb.....	\$Call
8mb.....	\$Call
16mb.....	\$Call

### UPGRADES

Ilisi 2 Slot Adaptor.....	\$45
Ilisi 64K Cache Card.....	\$125
LC/LCII 16Mhz FPU.....	\$49
LC/LCII 20Mhz FPU.....	\$59
Classic II 16Mhz FPU...	\$49
Classic II 20Mhz FPU...	\$59
Ilisi 64K Cache Card.....	\$115
Sonnet Twin Slot LC.....	\$235
FPU 's (Chip only)	
68882-16Mhz.....	\$50
68882-20Mhz.....	\$55
68882-25Mhz.....	\$65
68882-33Mhz.....	\$75
68882-50Mhz.....	\$129
PMMU 68851RC-16Mhz...	\$79
XC68040HRC-25M.....	\$375

### ACCELERATORS

#### DAYSTAR DIGITAL

Power Cache 33Mhz.....	\$389
w/68882 FPU.....	\$475
Power Cache 40 Mhz.....	\$550
w/68882 FPU.....	\$645
Power Cache 50 Mhz.....	\$715
w/68882 FPU.....	\$845
128K Fast Cache -	
Quadra 700/900.....	\$259
Quadra 700/900/950.....	\$389
Turbo 25 Mhz - 040.....	\$1089
Turbo 33 Mhz - 040.....	\$1339
Equalizer LC w/FPU.....	\$259
Charger DSP.....	\$809
RAM Power Card.....	\$429

#### LOGICA

Logicache 50 Mhz.....	\$669
w/68882 FPU.....	\$798
Adaptors.....	\$ 65

#### BRAINSTORM

Plus ,16Mhz.....	\$169
------------------	-------

#### NEWER TECHNOLOGY

700/900 Vari Overdrive.....	\$250
FX Overdrive II.....	\$250

#### NOVY QUIK 30

Plus 25 Mhz w/FPU.....	\$425
SE 25 Mhz w/FPU.....	\$389
Classic 25 Mhz w/FPU.....	\$465
Novy Image Pro (Video) -	
Plus 25 Mhz w/FPU.....	\$625
SE 25 Mhz w/FPU.....	\$549
Classic 25Mhz w/FPU.....	\$639

#### TECHNOLOGY WORKS

SE 25 Mhz w/FPU.....	\$435
SE 40 Mhz w/FPU.....	\$521
Classic 25 Mhz w/FPU.....	\$500
Classic 40 Mhz w/FPU.....	\$550
LC 040, 25 Mhz.....	\$725

### VIDEO RAM

512k Module.....	\$39
256k 80ns Module.....	\$27
Raster Ops.....	\$Call
Radius.....	\$Call
Xante.....	\$Call

### NEW PRODUCTS

#### IN STOCK NOW!!!

Centris 610/650 FPU  
Upgrade  
\$375

### SYQUEST

External 44MB.....	\$399
External 88MB.....	\$475
Dual Removable 44/44...	\$769
Dual Removable 88/44...	\$869
External 5110C 88MB...	\$559

#### CARTRIDGES

44MB.....	\$64
88MB.....	\$95

Drive packages include: Software, Cable, & Cartridges



## PowerBook Alley



#### PSEUDO STATIC RAM

MODEL	100	140/170	160/180	165C
4M	\$158	\$147	\$158	\$209
6M	\$226	\$211	\$245	\$269
8M	—	—	\$311	\$359
10M	—	—	\$389	—

#### DUO 210/230

4M	\$195	8M	\$345
----	-------	----	-------

Newer Technology Upgradable DUO Modules

4M Base....	\$179	4M Upgrade....	\$210	8M Upgrade....	\$379
-------------	-------	----------------	-------	----------------	-------

MacSac - Slim Carrying Case.....	\$29
MacSac - Deluxe Carrying Case.....	\$59

#### FULL CYCLE BATTERY CHARGERS

PowerBook 100.....	\$110
PowerBook 140/145/160/170/180.....	\$75

Automobile Power Adaptor.....	\$75
Battery for 140/145/160/170/180.....	\$59
Auxiliary Power Pack (4 X Capacity).....	\$159

ALL PB MEMORY SHIPS WITH TOOLS & INSTRUCTIONS

#### QUANTUM HARD DRIVES

GO/120MB.....	\$359
---------------	-------

#### PSI Internal Fax/Modems

PowerModem I.....	\$109
PowerModem II.....	\$229
PowerModem III.....	\$329
PowerModem IV.....	\$429

CONNECTIX "CPU" Utilities..... \$40

#### CABLES

HDI30 to 50 Pin SCSI.....	\$35
HDI30 to 25 Pin System.....	\$35

### MacSac Carrying Cases

LC, Ilisi CPU	
w/ Extended Keyboard...	\$63
Classic, SE, Plus	
w/ Extended Keyboard...	\$66
w/Standard Keyboard....	\$64
RGB Monitor12", 13".....	\$60
StyleWriter.....	\$45

### SPECIALS

#### \*\*NOW IN STOCK\*\*

Newer Technology's  
Radius Rocket Simms  
8MB and 16MB  
Modules

### LASER RAM

TI Micro 1mb.....	\$33
TI Turbo 4mb.....	\$195
HP LASERJET IV 4mb.....	\$135
NEC Modelsl/90/290 2mb.....	\$125
NEC Model 95 2mb.....	\$89
LaserWriter llntr 2mb.....	\$62
LaserWriter LS 512kb.....	\$25
LaserWriter Pro 600/630.....	\$Call
CALL FOR OTHER PRINTERS AND SIZES	

### Terms & Conditions

MC/VISA/Discover/AMEX  
NO CREDIT CARD SURCHARGE  
PRICES SUBJECT TO CHANGE  
COD PRICES LISTED  
APPROVED GOVERNMENT,  
UNIVERSITY, CORPORATE P.O.'S  
ACCEPTED  
PRODUCT NAMES IN THIS  
ADVERTISEMENT ARE TM OR ®  
OF THEIR RESPECTIVE  
COMPANIES  
CALL FOR OTHER CONFIGURATIONS



## Boards

# MET

## MAC PRODUCTS SINCE 1987!

### MICRO ELECTRONIC TECHNOLOGIES, INC.

#### DAYSTAR

DIGITAL

Accelerators for SE/30, LC, II, IIfx, IIfx, IIsi, IICI.

Power Cache 33mhz	\$379.
w/68882 math chip	\$459.
Power Cache 40mhz	\$549.
w/68882 math chip	\$639.
Power Cache 50mhz	\$699.
w/68882 math chip	\$849.
<b>NEW!</b> Charger/DSP	\$799.

#### CACHE CARDS

Combo Cache IIsi	\$219.
w/20mhz math chip	\$289.
Fast Cache IICI-32k	\$159.
128k Fast Cache	
Quadra 700 & 900	\$249.
Quadra 700, 900 & 950	\$379.
Fast Cache Turbo-128K	\$249.
-for 25MHZ/040	
Fast Cache Turbo-128K	\$339.
-for 33MHZ/040	
Equalizer LC	\$169.
w/16mhz math chip	\$249.
Power Math	\$109.
RAM Power Card-Omb	\$419.

#### TECHWORKS.

SE & Classic 25mhz	\$429.
w/FPU	\$469.
SE & Classic 40mhz	\$469.
w/FPU	\$589.
LC Accelerators	
040 w/FPU	\$799.
NuBus Cards	
040/25mhz	\$1489.
040/33mhz	\$1789.

#### ACCELERATORS FROM LOGICA

LogiCache 50MHZ Accelerator	\$659.
w/ FPU	\$759.
MacIIsi accelerator adapter	\$65.

#### SPECIALS!

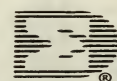
LC III, CENTRIS, Q800	
1M x 32 SIMMS	\$135
2M x 32 SIMMS	\$280

#### DAYSTAR

<b>NEW!</b> Turbo 040/25 MHZ	\$1079.
<b>NEW!</b> Turbo 040/33 MHZ	\$1329.

#### memory

1Mx8	\$32.
1Mx8 FX/NTX	\$35.
1Mx8 2-CHIP	\$29.
2Mx8	\$59.
4Mx8	\$125.
4Mx8 (II,IIfx)	\$132.
4Mx8 FX	\$128.
16Mx8	\$499.
16Mx8 (700/950)	\$539.
16Mx8FX	\$519.
MACINTOSH CLASSIC	\$39.
LC VIDEO RAM	\$49.
LC CO-PROCESSOR (16MHz)	\$55.
SI CO-PROCESSOR	\$119.
SI CACHE CARD	\$135.
CI CACHE CARD	\$125.
CLASSIC II CO-PROCESSOR	\$55.
QUADRA VRAM 80ns	\$31.
POWERBOOK 100 2M	\$89.
POWERBOOK 100 6M	\$289.
POWERBOOK 140/170 2M	\$89.
POWERBOOK 140/170 4M	\$159.
POWERBOOK 140/170 6M	\$249.
POWERBOOK 160/180 6M	\$249.
POWERBOOK 160/180 10M	\$450.
DUO 210/230 8M	\$329.
HP LASERJET 2P/3 4MB	\$135.
pricing subject to change	



SIGMA  
DESIGNS

#### MONITORS

for 160, 180, & Duo's	
PageView GS 15"	\$499
Anti-glare	\$539
Color Max 15 Color Display	\$789
for Powerbooks, Plus, SE's & Classic's	
Power Portrait	\$639

#### TWINCOM

internal fax/modems

24/96 PowerTwin	\$119
14.4/14.4 PowerTwin	\$299
<b>MET 9624PF</b> (pocket fax)	\$99



#### BATTERY TECHNOLOGY, INC.

PowerBook Battery (ex. 100)	\$59
Battery Charger (Full Cycle)	\$89
includes auto adaptor	
Battery Kit	\$139
includes battery and charger	

#### MICRO ELECTRONIC TECHNOLOGIES, INC.

35 South Street, Hopkinton, MA 01748

PH: (508) 435-9057 FAX: (508) 435-6481

**1-800-766-7466**

Tech Support: 1-800-967-7636

HOURS: 8:30AM - 7PM EST (M-F)

Corp. and Gov't PO's Accepted  
VISA/MC/AMEX Accepted

SIMMS low as  
**\$28.95**

PB-100 2MB  
**\$50**

1MB/4MB FX SIMMS CALL  
2MB/4MB SIMMS CALL  
QUADRA/LC VRAM CALL  
IIsi/IIsi Cache Card **\$128/\$138**  
Power RAM 2/4/6 MB CALL  
Mac LC/Classic FPU **\$64**

WE BUY 512K, 256K SIMMS

**1-800/541-7126**

Lifetime Warranty VS/MC no surcharge  
Corp. Gov. & Univ. PO's accepted FAX 512-219-1132  
Diamond Computer Resources Inc.  
13377 Pond Springs Rd. STE. 105, Austin, TX 78729 512-219-1222

For PowerBook  
News call  
Computer  
Care at  
1-800  
950-2273



#### MEMORY

CALL US LAST FOR LOWEST  
PRICES ON ALL MAC MEMORY,  
1MB TO 32MB. ALL POWER  
BOOKS & DUO DOCKS

#### LIFE TIME WARRANTY

M.C., VISA & DISCOVER  
P.O.'S WELCOMED

**1-800-662-SIMM (7466)**

SERVING THE INDUSTRY SINCE 1963

**DATA MEMORY SYSTEMS**

508-683-2325 FAX 508-975-5232

Calling about an ad?  
Say you saw it in  
**MacWEEK.**

#### Communications/Networking



#### PowerBook Fax and Data Modem

Simple	Powerful
• Simple to install	• 14,400 bps fax & data (V.32bis)
• Simple to learn	• 57,600 bps throughput (V.42bis)
• Simple to use	• Does not use CPU resources

- 24-hour BBS Customer Support
- 5-year Warranty
- 30-day Satisfaction Guarantee

Dealers call for dealer prices

PowerAccess 144/144 **\$289.00** +  
PowerAccess 96/96 **\$274.00** +  
Get up to \$30.00 back for dealer installation

**Dtronix**  
3140 De La Cruz Blvd., Santa Clara, CA 95054  
DTRONIX Intl. (408) 982-9667 FAX: (408) 982-9640

**800-995-1711**

OEM, Qualified as D.S.B. Corp., Govt. and University P.O.s accepted with approved credit.

#### Computer Systems



We BUY & SELL



Turn **YOUR**  
old Macs  
into **Cash!**

**800-998-0098**

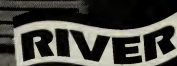
Fax: 802-496-6596

RIVER Computer, Inc., Box 1239  
Waitsfield, Vermont 05673, 802 496-7650  
Formerly Maya Computer 2.0

Call for an  
Instant Quote

One machine  
or a whole office

Convert your old Macs to cash,  
or trade up to a new computer.  
Buy, Sell or Trade, CALL US FIRST!



**Still the BEST!**

What's the most cost effective way  
to sell to your  
lucrative audience?

**MacWEEK MarketCenter**

Tell Your Source! Say you saw it in **MacWEEK MarketCenter.**



## Computer Systems

Close-Out  
CPU'S

*Mac*  
S.A.L.E  
INTERNATIONAL

Reduced  
Lasers

LASER  
BLOW-OUT

**QMS PS-410 - \$799.00**

(\* with purchase of toner)  
Like NEW, 300 dpi PostScript, Mac + IBM autoswitch, Factory Sealed/wrnty, (List - \$1,995.00)

- FINAL PRICE REDUCTIONS! USED EQUIPMENT -

**QMS ColorScript 100 - \$1,599.00**

(List \$9,995.00) 300 dpi Color Laser/PostScript

**Classic II 4/40 - \$799.00**

Mac SE 1/20 - \$499.00

Stylewriter - \$199.00

Apple Personal Laserwriter LS - \$599.00

Apple Laserwriter IINT - \$995.00

Apple Laserwriter IINTX - \$1,195.00

Radius Pivot Color/Mono - \$599.00/375.00

Radius TPD Mono - \$599.00

Mac II 2/0 - \$699.00

Mac IICx 2/0 - \$949.00

Call  
For Other  
Specials

### New Equipment Specials:

Classic 2/40 - \$775.00 Apple IICx Cache Cards - \$35.00  
Classic II 4/40 - \$949.00 Radius Pivot Color/Mono - \$799.00/475.00  
Stylewriter - \$249.00 PowerBook 170 4/40 w/modem - \$2599.00

### Mac Parts: (Partial Listing, Call with your needs!)

IICx Logic Board - \$1050.00 LW IInt Logic Board - \$179.00  
IICx Logic Board - \$650.00 LW IIntx Logic Board - \$479.00  
Mac II Logic Board - \$425.00 Power Supplies, Accessories, Etc.

\*WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT\*

New and Used Mac's

PRICES REPRESENT CASH DISCOUNTS!

Entire Mac Line

Bought and Sold

**1-800-729-7031**

Latest Models In Stock

Prices represent "2% Cash Discount!" - off Full Price.

LIMITED QUANTITIES

Returns at discretion of Mgmt./15% Restocking fee.

## New Macs In Stock !!!

### PowerBooks

145 4-40/80 \$1925 / \$2245  
160 4-80/120 \$2434 / \$2585  
165c 4-80/120 \$2899 / \$3095  
180 4-80/120 \$3562 / \$3785

### Quadra

800 8-230/525 \$3858 / \$4398  
800 8-525/1.2 CD \$4868 / \$5420

### Centris

610 4-80/80 Eth \$1588 / \$1688  
650 8-80/230 Eth \$2811 / \$3068  
650 8-230/1.2 CD \$3385 / \$4398

### Mac CPUs

LC III 4-80/170 \$1235 / \$1355  
VX 4-80/230 \$1550 / \$1740  
VX 5-80/230 CD \$1990 / \$2238

FREE ArtClip & ArtFont (\$99 value) w/purchase  
VISA, MC, AMEX & COD's accepted.  
Dealers & Int'l orders welcome

**M. P. D.**  
**1-800-272-4441**

8155 NW 33rd St Miami, FL 33122  
305-477-4441 / Fax 305-591-8723

## Macs for Less! Guaranteed!

All CPU's! All New!

Buy from us,

or you'll pay too Much!

**1-(800) 460-0085**

**BIG  
MAC**

Computers, Inc.  
Division of WCN

### POWER BOOKS

165C 4/80 2850  
165C 4/120 3195  
165C 4/232 3450  
160 4/40 2160  
160 4/80 2330  
160 4/120 2495  
180 4/80 3395  
180 4/120 3595  
180 14/230 4295  
Duo 230 4/80 2195  
230 4/120 2395  
DUO Dock 875  
PSI Fax/Modem 14.4 420

### QUADRA'S

800 8/0 3540  
800 8/230 3790  
800 8/525 4295  
800 64/1.2 7395  
800 136/2.4 13340  
950 8/0 4330  
950 8/200 4695  
950 16/525 5360  
950 64/1.2 7395  
700 All Config. CALL

### CENTRIS

650 4/80 2225  
650 8/230 2995  
650 8/230-CD 3450  
650 16/525 3795  
610 4/80 1550  
610 8/230 1995  
610 8/230-CD 2595

40MB Upgrade for Powerbook 100 \$75.

80MB Upgrade for all Powerbooks \$220.

## SPECIAL-MAC IIVX 4/230-\$1595! \*LIMITED QUANTITY AVAILABLE\*

### POWERBOOK

### EXCHANGE

100 to 160 1395  
100 to 140 950  
140 to 160 975  
140 to 165C 1550  
170 to 180 1695  
PORTBL to 160 1795

### MAC IIVX

4/80 1399  
5/80-CD 1650  
Si Ci LC III  
Si 3/40 950  
Ci 5/230 2495  
LC III 4/200 1425  
Classic Clr4/80 1350

### APPLE MONITOR

13"/14" Color 425/489  
16" Color 1230  
Adj. Keyboard 209  
Ext. Keyboard 145  
Gen. Extended 79

### APPLE PRINTER

Pro 630 2350  
Pro 600 1975  
IIF/IIG 2120/2590  
Select 300 785  
Select 310 1025  
Style Writer II 349

### PRINTERS

HP Desk Writer 395  
HP DW550C 729  
HP Laser 4M 1895  
NewGen CALL

### LOGICBOARDS

Plus 125  
SE 195  
Se/30 750  
Classic 295  
LC 395  
Mac IIX 2/40 1350  
Mac IIFX 2/40 2095  
Mac IICx5/80 1750  
Mac IICx2/40 1195  
Mac IISI 3/40 795  
Quad 9004/80 2950  
Quad 9508/80 4195  
Quad 7004/40 2595  
Port. 2/40 650  
P.B. 140 4/40 CALL  
P.B. 170 4/40 CALL  
NT/NTX 1095/1395  
IIF/IIG 1795/1995

### DEMO MAC'S

Plus 350  
SE 1/20 495  
SE/30 2/40 1195  
Classic 4/40 595  
LC 2/40 695  
Mac II 2/40 950  
Mac IIX 2/40 1350  
Mac IIFX 2/40 2095  
Mac IICx5/80 1750  
Mac IICx2/40 1195  
Mac IISI 3/40 795  
Quad 9004/80 2950  
Quad 9508/80 4195  
Quad 7004/40 2595  
Port. 2/40 650  
P.B. 140 4/40 CALL  
P.B. 170 4/40 CALL  
NT/NTX 1095/1395  
IIF/IIG 1795/1995

### POWER SUPPLY

CI/CX/700 225  
IIX/II/IIFX 295  
900/950 450  
Plus/SE Analog 135  
All Prices are C.O.D. & are subject to change

### HOURS Mon-Fri 8-7 P.M.

Saturday 10-5

### EXCHANGE

SE TO SE/30 695  
Classic to Color 960  
LC TO LCIII 900  
II TO Q700 1895  
IIFX TO 800 2195  
CX TO Q700 1750  
900 TO 950 2395  
700 TO 800 1995  
NT TO 600 1299  
NTX TO 630 1495

### H.D. & FLOPPY

Super Floppy 295  
800K 135  
80 M.B. Original 175  
40 M.B. Original 135

No sales tax out of CA

In business since 1987

Corporate/Government

P.O. Accepted

1 Year Warranty on New Equipment

Visa/M.C./AmEx Accepted

Next Day Shipping Available

All Prices are C.O.D. & are subject to change

## MAC PROFESSIONAL

We sell Apple original serial numbers only! One Year Warranty. We only sell new products.  
19801 Ventura Blvd., Woodland Hills, CA 91364 No tax outside CA. Dealers & international orders welcome.

(818) 719-0007

We guarantee  
best pricing.

FAX (818) 719-9115

POWERBOOKS	QUADRA	MAC IIVX	NEC/SONY
180 4/80...\$3777	800 8/230...Call	4/80...\$1647	3FGX/4FG \$647/747
180 4/120...\$3997	800 8/520...\$4297	8/240...\$1877	5FG/6FG\$1337/2377
165C 4/80...\$2777	800 8/500 w CD...\$4777	5/80-CD...\$2097	1320...\$ 377
160 4/80...\$2377	950 8/0...\$4377	Color Classic...\$1377	1430/1604 \$597/997
160 4/120...\$2577	950 16/520...\$5577	E Mach T16 11...\$1297	
145 4/40...\$1977	CENTRIS/LCIII	PRINTERS	APPLE
145 4/80...\$2247	610 4/80...\$1677	Laser 600...\$1947	14"/16" \$497/1197
4 MB Module...\$ 197	610 8/230...\$1977	Laser 630...\$2277	SIGMA DESIGN
10 MB Module...Call	650 8/230 w CD...\$3397	Select 300...\$ 797	Full Page...\$ 597
Duo 210 4/80...\$1747	650 8/230...\$3147	Select 310...\$ 997	19" Mono...\$1099
Duo 230 4/80...\$2077	LC III 4/80...\$1247	HP D.W. 550 C...\$ 697	SCANNERS
Duo 230 4/120...\$2447	LC III 4/170...\$1377	HP 4M...\$1877	UMAX 840...\$1297
Duo Dock...\$ 947	LC III 8/170...\$1497	Ext Key BD...\$ 99	UMAX 630...\$1097
SPECIAL 4 x 8 - 70 N.S. ....\$99			

## "MacAttack"

We attack high Mac prices

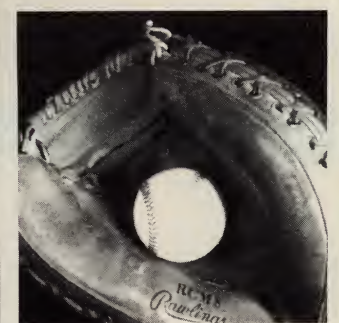
CPU's	Systems	Peripherals
Color Classic \$1299	All Memory Upgrades \$CALL	Mac Color Display 14" \$475
LC III 4/160 \$1315	Quantum Hard Drives \$CALL	Mac Color Display 16" \$1139
IIVx 4/80 \$1575	Turbo Mouse 4.0 \$109	Apple CD 300 \$545
Centris 610 4/80 \$1545	Custom Configurations \$CALL	Color One Scanner \$1205
Centris 650 4/80 \$2245	Software & Peripherals \$CALL	LaserWriter Select 300 \$785
Quadra 800 8/230 \$3565	& much, much more!!	LaserWriter Pro 600 \$1875
Quadra 950 8/0 \$4285	One Year Warranty on all new Macs!	Stylewriter II \$335
Any other Mac \$CALL		Extended Keybd \$165

We carry the entire Macintosh line

**1-800-299-MACS**

fax 409-764-6299

Leave your mark on volume buyers through  
**MacWEEK's MarketCenter.**



The  
Perfect  
Pitch  
To  
95,000  
MVB's

Call Your MacWEEK  
Representative Today!

**1-800-825-4237**

**MacWEEK**  
**MarketCenter**



## Peripherals

# Pacific Mac ...Networking? YES !!

1-800-546-4622 Fax (714) 447-6723 We carry Asante, Dayna and more !

QUANTUM		SYQUEST		MEMORY		FAX MODEMS	
120MB 2.5" GO	\$357/\$457	44MB Drive + Cartridge	\$345/\$385	1MB 80NS	\$30	SUPRA FAX	
85MB 3.5" ELS	\$198/\$258	88MB Drive + Cartridge	\$445/\$485	1MB 80NS FOR FX	\$32	V.32bis S/R Fax 14.4	\$235
170MB 3.5" ELS	\$271/\$331	88MB Reads and Writes 44&88	\$534/\$574	2MB 80NS	\$58	V.32bis S/R Fax 14.4 w/software	\$349
240MB 3.5" LPS	\$351/\$411	44MB Cartridges-Single	\$63	4MB 80NS	\$126	GLOBAL VILLAGE	
525MB 3.5" PRO	\$897/\$957	44MB Cartridges-10 Pack	\$610	4MB 80NS FOR FX	\$128	PowerPort Gold 14.4/96	\$429
1.0GIG 3.5" PRO	\$1309/\$1369	88MB Cartridges-Single	\$97	4MB 80NS MAC II, IIX	\$128	PowerPort Silver 96/96	\$419
1.2GIG 3.5" PRO	\$1465/\$1525	88MB Cartridges-10 Pack	\$950	16MB 80NS	\$510	PowerPort Bronze 24/96	\$199
FUJITSU		HEWLETT PACKARD		16MB 80NS 700/950	\$532	TelePort Gold 14.4/96	\$439
520MB 3.5"	\$768/\$828	2.0GIG DAT Backup	\$1309/\$1319	2MB PB 140/170	\$112	TelePort Silver 96/96	\$358
1.2GIG 5.25"	\$1206/\$1306	5.0GIG DAT Backup	\$1538/\$1548	4MB PB 140/170	\$179	TelePort Bronze 24/96	\$199
2.4GIG 5.25"	\$2222/\$2322	Includes Cartridge & Retrospect V2.0		6MB PB 160/180	\$289	PSI	
MAXTOR		SEAGATE		8MB PB 160/180	\$345	COMstation V 14.4/14.4	\$405
1.2GIG 5.25"	\$1149/\$1249	1.6GIG 5.25" 12MS	\$1769/\$1869	8MB DUO 210/230	\$369	COMstation IV 96/96	\$339
1.7GIG 5.25"	\$1495/\$1595	2.4GIG 5.25" 11MS	\$2459/\$2559	10MB PB 160/180	\$459	PowerModem IV 14.4/14.4	\$399
MICROPOLIS		3.4GIG 5.25" 11MS	\$3309/\$3409	256K V-RAM	\$24	PowerModem III 96/96	\$345
1.0GIG 3.5"	\$1239/\$1339			512K V-RAM	\$45	PhoneNet Connectors only \$10	
2.0GIG 5.25"	\$2509/\$2609			72 Pin Memory Available			

AMEX/MC/Visa/Discover No Surcharge !

No refunds on shipping. All drives carry a 30-day money-back guarantee. Must obtain RMA# before returning any merchandise. Cash & quantity discounts available-Ask for Arnie. We have hard-to-find software! Prices subject to change without notice.

**NEW**



**\$995**

**20" MultiSync Color Monitor**

Mac or IBM compatible  
Up to 1280 x 1024

1 Year Warranty  
30 day money-back guarantee

**510/838-1031 Phone**  
**510/838-0689 FAX**

ProDirect					
Quantum Best Byte for MACs!					
Capacity	Int.	Ext.	Capacity	Int.	Ext.
ELS 42 MB	\$169	\$229	LPS 240 MB	\$350	\$410
ELS 85 MB	195	255	Pro 425 MB	879	939
ELS 127 MB	250	310	LPS 525 MB	889	945
ELS 170 MB	275	335	Pro 700 MB	1145	1205
GO 120 MB Drive	375	475	Pro 1050 MB	1259	1319
160 MB GRS 2.5"	519	619	Pro 1225 MB 10 MS	1425	1485

MICROPOLIS Music & Multi Media Apps. Novell Certified					
Capacity	Model	Specifications	Int.	Ext.	
560 MB	M2105	3.5" 10 MS, 5400 RPM FAST SCSI-2	\$945	\$1005	
765 MB	M1624	5.25" 14 MS, 5 yr. War. Fast SCSI-2	\$1075	\$1135	
1.2 GB	M2112	3.5" 10 MS, 5 yr. War. Fast SCSI-2	1219	1279	
1.5 GB	M1528	5.25" 14 MS, 5 yr. War. Fast SCSI-2	1645	1765	
2.0 GB	M1548	5.25" 14 MS, 5 yr. War. Fast SCSI-2	1899	2019	
2.4 GB	M1924	5.25" 11 MS, 5 yr. War. Fast SCSI-2	2499	2609	

Very Quiet - Great For The Studio!

FUJITSU Plays well with others!					
Capacity	Model	Specifications	Int.	Ext.	
185 MB	M2614	3.5" 17 MS, 3 year Warranty	\$279	\$339	
330 MB	M2622	3.5" 9 MS, 5 Yr. War. Fast SCSI-2	765	850	
520 MB	M2624	3.5" 9 MS, 5 Yr. War. Fast SCSI-2	765	825	
1.2 GB	M2694	3.5" 8.5 MS, 5 Yr. War. Fast SCSI-2	1475	1535	
1.2 GB	M2266	5.25" 11 MS, 5 Yr. War. Fast SCSI-2	1189	1309	
2.06 GB	M2652	5.25" 11 MS, 5 Yr. War. Fast SCSI-2	2075	2195	
2.40 GB	M2654	5.25" 11 MS, 5 Yr. War. Fast SCSI-2	2210	2320	

Extremely Fast !... Fujitsu Reliability

HEWLETT PACKARD			CONNER		
Capacity	Model	Size	Capacity	Int.	Ext.
1.2 GB	C2247	3.5"	85 MB LPS	\$195	\$255
1.2 GB	97558	5.25"	120 MB LPS	245	308
1.6 GB	97560	5.25"	170 MB LPS	275	335
2.11 GB	C3009	5.25"	212 MB, 12 MS Fast	355	415
2.35 GB	C3010	5.25"	540 MB, 8.5 MS, 4500 RPM	889	949

5 Yr. War./Multiple Drive Subsystems Available  
Conner Drives Are Apple Authorized.

TOSHIBA			UMAX		
Capacity	Int.	Ext.	UC 1200 with Adobe Photoshop		\$2979
1.2 GB 12MS, 3.5"	\$1379	\$1439	UC 840 with Adobe Photoshop		1269
877 MB 12MS, 3.5"	1025	1085	UC 630 with Adobe Photoshop		1085
213 MB Power Book Drive	639	739	Auto Doc. Feeder/Transparency		485/685

POWERBOOK MEMORY			SPECIALS		
Model	Capacity	Price	Capacity	Int.	Ext.
PowerBook 140/170	4 MB	\$165	185 MB Fujitsu	\$279	\$339
PowerBook 140/170	6 MB	209	1.2 GB 3.5" Micropolis	1379	1439
PowerBook 160/180	4 MB	189	1.5 GB Micropolis	1645	1765
PowerBook 160/180	6 MB	269	2.0 GB Micropolis	1879	1979
PowerBook 160/180	8 MB	345	PB 160/180 4 & 6 MB Memory	\$179/\$259	
PowerBook 160/180	10 MB	395			

MADE IN THE USA • LIFE TIME WARRANTY • All drives are NEW... NO Factory Refurbs or used equipment. • Multiple Drive/Cabinet Configurations Available.

800-524-9952

4976 Lincoln Drive, Minneapolis, MN 55435  
International Orders Fax 612.935.8352 or Call 612.935.8201 • Dealer Inquiries Welcomed  
Volume Discounts Available • Corporate • Educational • Government P.O.'s Accepted  
Please Specify For: Mac, HP Workstation, SUN Sparc or IBM RS6000

Desktop Publishing • Multimedia • Networking

**MacSee** Lawndale  
Tel: (800) 950-6711 • Fax: (310) 793-0041  
16711 Hawthorne Blvd. • Lawndale, CA 90260

**Macintosh** Full software and hardware selections

Centris 610 8-80	\$1849	Duo Dock \$949	Centris 610 8-230	\$2049	230 hard disk CD, 8 MB Ram	Centris 650	230 hard disk CD, 8 MB Ram
Centris 650 4-80	\$2289	DUO 210 4-40	Centris 650 8-80	\$2599	DUO 230 4-120	\$2589	\$3399
Centris 650 8-425	\$3299	160 4-80	Quadra 800 8-230	\$3649	165C 4-80	Quadra 800	CD, 72 MB Ram 425 fast SCSI II
Quadra 800 8-230	\$3649	165C 4-120	Quadra 800 8M-1GB	\$4699	165C 4-120	Quadra 950	20 MB Ram 1.2GB SCSI 2HD
Quadra 950-400	\$5149	180 4-120					

**MONITORS**

SuperMac 21"GS	\$1099	HP 4M	\$1969	1.2 GB Micropolis 10ms	\$1369	Pinnacle Micro DAT/CD ROM	Micronet
SuperMac 21" color	\$2480	QMS 860 11x17	\$3869	Quantum 4255 8ms	\$699	650 MB 19ms optical \$2899	WangDat 5 GB Ext. \$1599
NEC 5FGE/6FG	\$1199/2389	Seiko, Nec, TI	SCALL	Toshiba 1.2 GB SCSI 2	\$1399	650 External WORM	\$2850

**PRINTERS**

Stylewriter II.....\$324  
Laserwriter pro 600.....\$1850  
General Parametrics Spectra Star Q10E.....\$3399

**HIGH TECH DIRECT**

**800-777-7058**

Intl 415-578-1260 Fax 415-578-1165  
1900 S Norfolk St #320 Visa/MC No Surcharge  
San Mateo, CA 94403 PO s Welcome!!

Warehouse prices- Mail Order convenience

**All new Macs! New Low Prices**

ClassicII w/keyboard.....	\$985	Apple 14"trin.....	\$489
LC III 4/80 w/keyboard.....	\$1245	Magnavox 14".....	\$399
LC III 4/160 w/keyboard.....	\$1365	Sony 1604S.....	\$1069
Centris 610 4/80.....	\$1625	SuperMac 17T.....	\$1049
Centris 610 8/230.....	\$2175	Mitsubishi 20"multi.....	\$1089
Centris 650 4/80.....	\$2345		
Centris 650 8/230.....	\$3065	<b>Printers</b>	
Quadra 800 8/230.....	\$3875	Stylewriter II.....	\$324
Quadra 800 8/500 w/CD.....	\$4735	Laserwriter pro 600.....	\$1850
Powerbooks and Memory.....	CALL	General Parametrics Spectra Star Q10E.....	\$3399

**(OVER 10,000 PRODUCTS AVAILABLE-NEXT DAY AIR!)**

## Spend your ad dollars wisely.

Advertise in MacWeek and reach subscribers who are personally involved in purchasing Macintosh hardware, software and services.

Of MacWeek subscribers:

- ◆ 95% initiate Mac product purchases
- ◆ 95% are involved in selecting Mac brands to buy
- ◆ 79% are involved in selecting purchase source
- ◆ 42% authorize purchases

For more information how your advertising can reach these active decision makers, call your MacWeek MarketCenter account representative today at 800-825-4237.

Source: MacWeek 1992 Study of Microcomputer Product Ownership and Buying Plans

**MacWEEK** reaches 95,000 qualified Macintosh volume buyers at thousands of corporate, government, and university sites.

**95,000 MVB's Means We're a Sure Goal in May**

**Call Your MacWEEK Representative Today!**

**1-800-825-4237**

**MacWEEK MarketCenter**



# IMS

(800) 643-3591

• Unformatted Capacity • Model • Form Factor • (ms) • Int. • Ext.

## FUJITSU

520MB	M2624FA	3.5 HH	9	\$855	\$915
1.1GB	M2694SA	3.5 HH	8.5	\$1699	\$1749
1.2GB	M2266SA	5.25 FH	14.5	\$1379	\$1479
2.0GB	M2652SA	5.25 FH	14.5	\$2289	\$2389
2.4GB	M2654SA	5.25 FH	14.5	\$2489	\$2599

• Five year warranty

## QUANTUM

42MB	ELS42	3.5 1"	19	\$175	\$235
85MB	ELS85	3.5 1"	17	\$199	\$259
127MB	ELS127	3.5 1"	17	\$235	\$295
170MB	ELS170	3.5 1"	17	\$255	\$315
240MB	LPS240	3.5 1"	10	\$369	\$429
525MB	LPS525	3.5 1"	10	\$849	\$959
700MB	PRO700	3.5 HH	10	\$1105	\$1165
1.0GB	PRO1050	3.5 HH	10	\$1236	\$1295
1.2GB	PRO1225	3.5 HH	10	\$1429	\$1489
80MB	Go•Drive	2.5	17	\$299	\$399
120MB	Go•Drive	2.5	17	\$379	\$479

• ELS, LPS, PRO drives have two year warranty

• GO•drives have one year warranty

## SYQUEST

44MB	IMS 44MB External			\$389	\$729
88MB	IMS 88MB External			\$489	\$899
88MB	IMS 88c External			\$589	
44MB	SyQuest SQ400 Cartridge			\$64	
88MB	SyQuest SQ800 Cartridge			\$99	

• Drives ship with one cartridge

• Drives have two year warranty

## MAXTOR

120MB	7120	3.5 1"	15	\$239	\$299
207MB	7213	3.5 1"	15	\$349	\$409
330MB	LXT-340	3.5 HH	15	\$599	\$659
535MB	LXT-535	3.5 HH	12	\$959	\$1019
540MB	MXT540SL	3.5 HH	8.5	\$975	\$1035
1.2GB	MXT1240S	3.5 HH	8.5	\$1599	\$1659
1.2GB	PO-12S	5.25 FH	13	\$1295	\$1395
1.7GB	P1-17S	5.25 FH	13	\$1595	\$1695

• 3.5" drives have one year warranty

• 5.25" drives have two year warranty

## SEAGATE

1.2GB	ST11200N	3.5 HH	10.5	\$1339	\$1399
2.1GB	ST42100N	5.25 FH	12.9	\$1869	\$1969
1.6GB	ST41600N	5.25 FH	11.5	\$1679	\$1779
2.4GB	ST42400N	5.25 FH	11	\$2499	\$2599
3.4GB	ST43400N	5.25 FH	11	\$3399	\$3499

• Drives have one year warranty

## MICROPOLIS

660MB	1624	5.25 HH	14.5	\$1269	\$1395
1.0GB	2112	3.5 HH	10	\$1689	\$1749
2.0GB	1924	5.25 FH	10	\$2849	\$2949

• Drives have five year warranty

## SIGMA DESIGNS MONITORS

ColorMax 15  
for PowerBook 160, 180 and  
Duo computers \$739

Power Portrait  
for Mac Plus, Classic, Classic II,  
SE, SE/30 & PowerBook  
computers \$619

• Call for information about other Sigma Designs products.



## EXTERNAL DRIVE HOUSINGS



Full Height \$145  
Half Height \$85

- Closed or Open Front Bezel.
- Includes all necessary cabling & "FWB" formatting software.
- 110/220 VAC auto switching power supply.
- Full Height cabinet will hold two 3.5" or 5.25" HH drives.

## PSI

Modems

COMstation One	\$139
COMstation Two	\$239
COMstation Four	\$349
COMstation Five	\$419
PowerModem I	\$139
PowerModem II	\$229
PowerModem III	\$319
PowerModem IV	\$379



## POWERBOOK ACCESSORIES

PowerBook Cable	
HDI-30 ~ 50 Centronics	\$39
Power Pad (keypad)	\$89
PowerBook Memory	(Call)
PowerBook Battery	
for 140/145/160/170/180	\$65
Battery Charger	\$99

## TOSHIBA 205MB HARD DRIVE

Internal for the PowerBook  
2.5" MK224FB-S ...\$599

## TWINCOM

Modems

24/96 PowerTwin  
Internal 2400/data. 9600/send 4800/  
receive fax \$129

14.4 PowerTwin  
internal 14.4 data/fax \$299  
• Modems ship with software and all necessary cabling.

## DAYSTAR

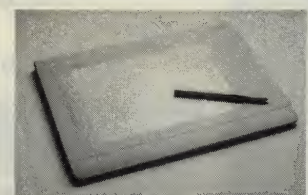
PowerCache	w/FPU
33MHz	\$379 \$469
40MHz	\$549 \$639
50MHz	\$719 \$849
PowerCache Adapter	\$42
FastCache	
Turbo 25/128k	\$254
Turbo 33/128k	\$339
Quadra 700/900	\$254
Quadra 950	\$382
25 MHz Turbo 040	\$1104
33 MHz Turbo 040	\$1358

• PowerCache & FastCache have  
36 month limited warranty.

## WACOM

Graphics Tablets

6" x 8" w/Pressure Pen	\$309
6" x 9" Standard	\$462
12" x 12" Standard	\$660
12" x 18" Standard	\$990
12" x 18" Electrostatic	\$1059



## MAGNETO OPTICAL MEDIA CARTRIDGES

600MB	5.25"	\$99
128MB	3.5"	\$40

**FWB Hard  
Disk ToolKit™**  
Now Shipping  
With All IMS  
Hard Drives

## APPLIED ENGINEERING

Accelerators

for Mac LC, LCIII, Performa 400, & Color Classic

TransWarp	4300	40MHz	\$369	w/FPU	\$505
-----------	------	-------	-------	-------	-------

for Mac SE & SE/30

TransWarp	1300	25MHz	\$185		
TransWarp	1300	40MHz	\$249	w/FPU	\$409

for Mac Classic

TransWarp	2300	25MHz	\$185		
TransWarp	2300	40MHz	\$249	w/FPU	\$340

## International Mac Specialists

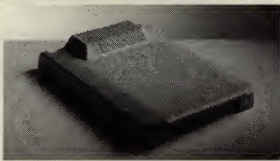
15502 Mosher Avenue, Tustin, CA 92680 Int. (714) 259-7636  
24 hour FAX (714) 259-7850 AppleLink®: IMS.TUSTIN

## UMAX

Color Scanners

UC630	\$1078
UC840	\$1248
UC1200	\$2999
Transparency Adapter	\$709

• UMAX scanners ship with Adobe PhotoShop™ software.



TWINCOM

DAYSTAR

FUJITSU

Maxtor

ASANTÉ

Quantum

BTI

BATTERY TECHNOLOGY, INC.



# THE SOURCE FOR MACDRIVES

30 DAY  
MONEY  
BACK  
GUARANTEE

IN AMERICA  
AND THE WORLD

DRIVE PRICES  
GO DOWN. CALL  
FOR  
CURRENT PRICES

S.A.G. hard drives with the best price, service and support around. We have been providing hard drives and storage systems to the international computer service industry for years, to the people who replace and upgrade computer systems for major corporations worldwide.

They demand and depend on expert technical assistance, aggressive pricing and immediate delivery. Why settle for second best?

## STORAGE SUBSYSTEMS



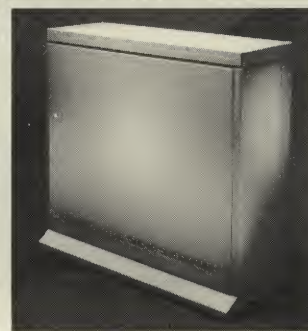
3.5" DISK SUBSYSTEMS



5 1/4" DISK SUBSYSTEMS



REMOVABLE DISK SUBSYSTEMS  
2 DRIVES SOLUTION WITH CANISTERS AND SCSI CABLES



TOWER SUBSYSTEMS  
8 DRIVES SOLUTION

WE CAN CUSTOM CONFIGURE ANY MAC SUBSYSTEM FROM 100MB TO 50GB - CALL FOR PRICES

## HARD DRIVES

ALL DRIVES ARE LISTED WITH FORMATTED CAPACITIES

### FUJITSU 5 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
M2623FA	425	3.5	12	\$ 797	\$891
M2624FA	520	3.5	12	\$ 770	\$862
M2266S	1079	FH	14	\$1195	\$1312
M2694	1080	3.5	10	\$1489	\$1581
M2652S	1750	FH	11	\$2083	\$2200
M2654S	2061	FH	11	\$2277	\$2395

### DEC 5 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
DSP3085S	850	3.5	9.5	\$1212	\$1307
DSP3105S	1050	3.5	9.5	\$1248	\$1343
DSP3160S	1660	3.5	10	\$1782	\$1877
DSP5200S	2000	FH	12.5	\$1939	\$2056
DSP5350S	3500	FH	11.5	\$3300	\$3421

### CD-ROM CHINON

CDS-535 INTERNAL KIT	650MB	280MS	\$ 450
----------------------	-------	-------	--------

"PHOTO CD COMPATIBLE"

### SEAGATE 1 YEAR WARRANTY \* 5 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
ST3283N	245	1"	12	\$ 368	\$ 462
ST3550N	456	1"	12	\$ 824	\$ 918
ST3600N	540	1"	10.5	\$ 859	\$ 953
ST4767N	665	FH	12	\$1228	\$1345
ST1980N	860	3.5	9.9	\$1082	\$1175
ST41200N	1037	FH	16	\$1053	\$1160
ST11200N	1037	3.5	10.5	*\$1146	\$1250
ST41650N	1420	FH	15	\$1435	\$1545
ST41600N	1420	FH	11.5	\$1679	\$1789
ST42100N	1900	FH	12.9	*\$1807	\$1924
ST42400N	2100	FH	11	*\$2405	\$2515
ST43400N	2900	FH	11	\$3015	\$3125

### SPECIALS

TYPE	MB	SIZE	SEEK	INT.	EXT.
Fujitsu	520	3.5"	12	\$ 770	\$ 870
Seagate	1,04GB	3.5"	10	\$1169	\$1250
Fujitsu "Optical"	128	3.5"	30	\$1020	\$1130
Seagate	1900	FH	12	\$1725	\$1870

### MAXTOR 1 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
7213SY	213	1	15	\$ 320	\$ 420
LXT340SY	340	3.5	13	\$ 570	\$ 670
LXT540SY	540	3.5	8.5	\$ 930	\$1050
1240S	1240	3.5	8.5	\$1450	\$1550
P012SH	1059	FH	13	\$1275	\$1399
P017SH	1345	FH	13	\$1557	\$1682

### QUANTUM 2 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
LPS240S	240	1"	16	\$ 355	\$ 455
LPS525S	525	1"	10	\$ 895	\$ 995
PD700S	700	1"	10	\$1155	\$1240
PD1050S	1050	3.5	10	\$1324	\$1399
PD122S	1200	3.5	10	\$1451	\$1539

### CONNER 1 YEAR WARRANTY

TYPE	MB	SIZE	SEEK	INT.	EXT.
30170	170	1"	17	\$ 260	\$ 360
30200	212	1"	12	\$ 333	\$ 430
30540	545	1"	10	\$ 872	\$ 972

- Immediate Delivery: we have a 92% rate of shipping within 24 hours. Overnight delivery available.
- Product knowledge: our sales people and technicians will provide the most cost effective drive or subsystem solution.
- Technical assistance: toll FREE service Monday thru Friday, 9am to 6pm EST.

- Payment: VISA, M/C, Corporate, Gov't and Education Purchase Orders welcome. No surcharges for C.O.D. or Credit Cards. We check for stolen credit cards.
- Volume discounts available

1 - 8 0 0 - 9 8 9 - 3 4 7 5

S.A.G. ELECTRONICS

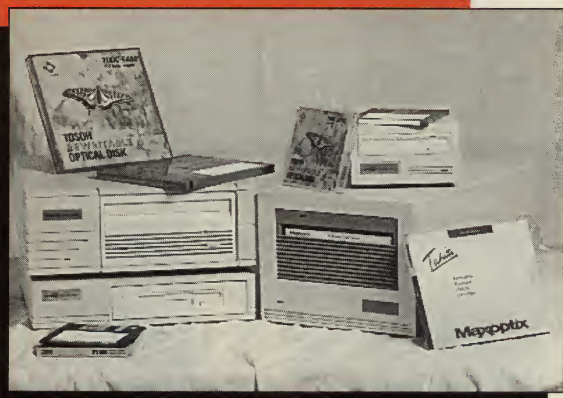
1506 GORHAM STREET, SUITE 207 • LOWELL, MA 01852 • FAX (508)683-3528 • OFFICES: MASSACHUSETTS • PENNSYLVANIA

RMA # must be acquired first. Shipping is non-refundable. Returns may be subject to restocking fee.



# MEGAHAUS HARD DRIVES

MegaHaus external enclosures feature external, ID select, external termination, 2 SCSI connectors, Metal case. SpotOn software features disk caching, password protection, and a wide variety of drive icons.



- Our 6th year selling Quality Drives at Incredible prices
- 30 Day Money Back Guarantee—Never a restocking fee
- Lifetime technical support
- 24 Hour turn around 1 Year Replacement Policy
- Advanced Replacement Available
- Discount freight charges

## All of Your Storage Needs Under One Roof!

MegaHaus offers unbeatable value! We ship 99% of our orders within 24 hours.

### Hard Drives

Includes: SpotOn Formatting Software, Cables

Capacity	Speed	RPM	Brand	Warranty	Internal	External
84Meg	17ms	3822	Conner	2 Years	\$193	\$269
85Meg	17ms	3600	Quantum	2 Years	\$195	\$275
127Meg	17ms	3600	Quantum	2 Years	\$259	\$339
130Meg	17ms	3600	Maxtor	2 Years	\$239	\$319
170Meg	17ms	3600	Conner	2 Years	\$269	\$349
213Meg	15ms	3600	Maxtor	2 Years	\$329	\$409
213Meg	12ms	4500	Conner	2 Years	\$339	\$419
240Meg	16ms	4300	Quantum	2 Years	\$354	\$425
340Meg	13ms	3600	Maxtor	1 Year	\$589	\$669
520Meg	12ms	4400	Fujitsu	5 Years	\$829	\$909
540Meg	8.5ms	6300	Maxtor	2 Years	\$999	\$1079
560Meg	10ms	5400	Micropolis	5 Years	\$1059	\$1139
877Meg	12ms	3600	Toshiba	5 Years	\$1059	\$1139
1050Meg	10ms	5400	Micropolis	5 Years	\$1319	\$1389
1080Meg	9.5ms	5400	Fujitsu	5 Years	\$1499	\$1579
1100Meg	10.5ms	5400	HPackard	5 Years	\$1529	\$1599
1230Meg	12ms	3600	Toshiba	5 Years	\$1329	\$1399
1200Meg	8.5ms	6300	Maxtor	3 Years	\$1579	\$1659
2060Meg	12ms	5400	Fujitsu	5 Years	\$2299	\$2379

We sell the complete lines of all brands shown. We have Disk Array Systems for incredible performance and fault tolerance.

### Syquest Drives

Includes: SpotOn Formatting Software, 1 Cartridge, Cables

Capacity	Model	Speed	Internal	External
44Meg	SQ555	20ms	\$349	\$389
88Meg	SQ5110	20ms	\$439	\$479
88Meg	SQ5110C	20ms	\$519	\$559
Media	44Meg	44Meg5pack	88Meg	88Meg5pack
	\$64	\$315	\$98	\$479

### CD-ROM Drives

Includes: Trantor Driver Software with Music play software, cables, 1 year warranty. All CD Drives are Kodak multisession Photo CD Compatible.

Brand	Speed	Transfer	Type	Internal	External
Texel	265ms	300KB/sec	Single Disk	\$509	\$549
Toshiba	200ms	330KB/sec	Single Disk	\$549	\$589
Toshiba	200ms	330KB/sec	Battery Powered	N/A	\$729
Pioneer*	380ms	150KB/sec	6 Disk Changer	N/A	\$899
Pioneer	270ms	612KB/sec	6 Disk Changer	N/A	\$1299
CD's (sold only with CD Drive)		Encyclopedia \$55	World Atlas \$22	Us History \$35	Family Doctor \$72
				GuinnessRecords \$45	Speakers \$90
					Caddies \$9

### Tape Drives

Includes: Retrospect Backup Software, 1 Tape, Cables, and a 1 year warranty

Capacity	Type	Brand	Speed	Internal	External
250Meg	QIC 150	Archive	7MB/min	\$459	\$499
2Gig	DAT	Archive	11MB/min	\$1039	\$1079
2Gig	DAT	Hewlett Packard	12MB/min	\$1259	\$1299
4-8Gig	DAT	Archive	88MB/min	\$1309	\$1349
4-8Gig	DAT	HewlettPackard	42MB/min	\$1429	\$1469

We have Hewlett Packard and Archive DAT Autoloaders for large backup.

Tapes DC6250	6250 5 pack	90 Meter DAT	DAT 5 pack	DAT Cleaning Tape
\$29	\$135	\$17	\$75	\$19

### Optical Drives

Includes: SpotOn Formatting Software, 1 Media, and Cables

Capacity	Speed	Brand	Feature	Internal	External
20Meg	65ms	Insite	Floptical	\$319	\$359
128Meg	30ms	Fujitsu	Fastest 128Meg	\$1099	\$1139
650Meg	53ms	Pioneer	MultiFunction	\$2059	\$2099
650Meg	27ms	Hewlett Packard	MultiFunction	\$2559	\$2599
1Gig	35ms	Maxoptix Tahiti IIM	MultiFunction	\$2959	\$2999
Media	20Meg	20Meg 5 pack	128Meg	128Meg 5 pack	650Meg
	\$23	\$95	\$39	\$189	\$96
			650Meg 5 pack	1Gig	1 Gig 5 pack
			\$469	\$189	\$929

# 1-800-786-1191

Fax (713)333-3024

No surcharge for credit card or C.O.D.

Prices and specifications subject to change.  
All trademarks are registered trademarks of their respective companies.  
Returns must be in new condition.  
\*DRM-600 is not Photo CD Compatible



## MEGAHAUS HARD DRIVES

1110 NASA Rd. 1 #306  
Houston, Texas 77058



## Modems



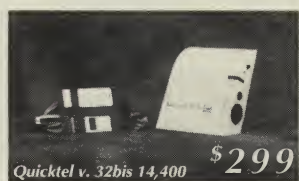
**Just Arrived**  
U.S. Robotics  
Sportster 14,400  
Mac&Fax  
**\$249**

U.S. Robotics Sportster 14,400 ..... 249  
Now your Mac can be a fax and a data modem, too, and with U.S. Robotics reliability built in. U.S. Robotics new Sportster 14,400 Mac&Fax turns your Mac into multi-talented fax machine and FaxIt™ software lets you send faxes to any other fax machine or fax board, anywhere, and print them out on a laser printer. Mac&Fax Sportster: 14,400 CCITT V.32 bis with V.42 bis - 14,400 bps throughput, compatible with 300, 1200, 2400, and 9600 bps CCITT standards, 9,600 bps send and receive Group III Fax, V.42/MNP 2-4 error control and V.42 bis/MNP 5 data compression.

SupraFAX Modem Plus 2,400 ..... 199  
2,400 bps Modem/9,600 send-receive FAX, v.42bis data compression for up to 9,600 bps data.



SupraFAX Modem 14,400 ..... **\$349**  
SupraFAX Modem v.32bis 14,400 ... 349  
14,400 bps Modem/14,400 send-receive FAX, v.42bis compression for up to 57,600 bps data. All SupraFAX modems include STB and MicroPhone software, cable and have a 5-year Warranty.



Quicktel 2400/9600 FAX/Modem ... 139  
2,400 bps Modem/9,600 send-receive FAX, v.42bis compression for up to 9,600 bps data. Incl. software.  
Quicktel v.32bis 14,400 ..... 299  
14,400 bps Modem/14,400 send-receive FAX, v.42bis compression for up to 57,600 bps data.

## SIMMs & Accel.

### Mac II, IIx, IIfx, Ili & Quadra:

Classic 3 Meg. Card w/1 Meg. ....	49
1 Meg. - 1M x 8 - 120, 100, 70 ..	26, 29, 32
2, 4, 8 Meg. x 8 - 80 (IIfx) .....	59, 119, 279
4 Meg. - 4M x 8 - 70 .....	129
16 Meg. - 16M x 8 - 80 .....	499
16 Meg. - 16M x 8 - 80 (Low) .....	529
16 Meg. - 16M x 8 - 70 (Q-950) .....	499

### Mac IIfx:

4 Meg. - 4M x 8 - 70 (IIfx) .....	149
8 Meg. - 8M x 8 - 80 (IIfx) .....	299
16 Meg. - 16M x 8 - 80 (IIfx) .....	599

### Mac Centris, Color Classic, LCIII, Quadra 800

1 Meg. - 1M x 32 - 70 (72pin) .....	129
1 Meg. - 1M x 32 - 60 (72pin) .....	139
2 Meg. - 2M x 32 - 70 (72pin) .....	259
2 Meg. - 2M x 32 - 60 (72pin) .....	269
4 Meg. - 4M x 8 - 70 (72pin) .....	159
4 Meg. - 4M x 8 - 60 (72pin) .....	189
8 Meg. - 8M x 8 - 70 (72pin) .....	329
8 Meg. - 8M x 8 - 60 (72pin) .....	369
16 Meg. - 16M x 8 - 70 (72pin) .....	699
16 Meg. - 16M x 8 - 60 (72pin) .....	849

### Video Memory:

Mac LC - 512K Video SIMM .....	49
Quadra 700 - 256K Video SIMM .....	29
Quadra 900 - 256K Video SIMM .....	29
Quadra 950 - 256K Video SIMM .....	29

All SIMMs have a limited lifetime warranty! Call for latest prices!

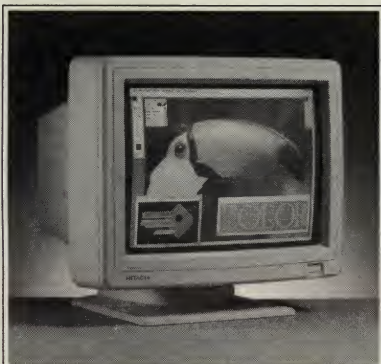
### Mac Powerbook:

Powerbook 100 - 4, 6 Meg. ....	179, 229
Powerbook 140/170 - 4, 6 Meg. .	159, 209
Powerbook 160/180 - 6 Meg. ....	229
PowerBook 160/180 - 8,10 Meg.	349, 449
Powerbook 210/230 - 8, 10 Meg.	399, Call
Powerbook 210/230 - 20 Meg. ....	Call

### Accelerators & Cache:

Co-Processor - Mac LC .....	79
Co-Processor - Mac Classic II .....	79
Ilii Cache Card .....	169
Ilii Cache w/FPU Socket .....	149
Ilii Cache w/FPU Installed .....	199
Classic Accel w/Co-Processor .....	199
SE Accelerator w/Co-Processor .....	279
Quadra 700/900 Accelerator .....	299

7VS-A: Increases processor speed from 25MHz to 30MHz!



**20 Inch Hitachi 256 Color Monitor!**  
**\$799**  
Monitor Only

20" Hitachi Monitor Only ..... 799  
Business Package\* - 256 Color ..... 999  
Artist Package\* - 16 Million Color .. 1,649

\* Package includes a new 20" Hitachi Mac compatible color monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.



**radius**  
PrecisionColor 8XJ ..... 489  
256 colors (8-bits) at maximum resolution (1,152 x 882), 4 display resolutions, accelerated.  
PrecisionColor 8X ..... 739  
256 colors (8-bits) at maximum resolution (1,152 x 882), 4 display resolutions, accelerated.  
PrecisionColor 24XP ..... 489  
16 million colors (24-bits) at maximum resolution (832 x 624), 2 display resolutions, accelerated.  
PrecisionColor 24XK ..... 819  
16 million colors (24-bits) at maximum resolution (1,024 x 768), 3 display resolutions, accelerated.

**Special Offer!!**  
DirectColor 24-bit Video Card With QuickColor Graphics Accelerator Card  
**\$699**

## Ethernet/Network



ASANTÉ MacCon3 - 64K ..... 189  
The 3-in-1 (Thick, Thin and 10BaseT) Ethernet card for most expandable Macintoshes including the Ilii and SE/30. Not available for the LC or LCII.

ASANTÉ MacCon+ - 64K ..... 149  
Economical, 64K high-performance Ethernet for almost every model of Macintosh. Select either Thick/Thin or Thick/10BaseT. The ASANTÉ MacCon+ models for the LC, LCII and Ilii each have a socket for a co-processor.

ASANTÉ FriendlyNet Adapters ..... 69  
Designed to work with the new Apple Ethernet cabling system - a plug-and-play networking system which makes Ethernet as simple and easy as LocalTalk.

ASANTÉ 10BaseT Hub/8 ..... 239  
An economical way to expand your Ethernet network using unshielded twisted pair wiring (10BaseT).

ASANTÉ 10BaseT Hub/12 ..... 479  
A more sophisticated and larger version of the ASANTÉ 8-port Hub. The most economical way to expand your Ethernet network using unshielded twisted pair (UTP, 10BaseT). Fully supports IEEE specifications.

ASANTÉ Hub 1012 ..... 1,379  
A 12-port, intelligent 10BaseT hub. Built-in expansion slot for internet-working option cards (optional SNMP in-band module). Multiple hubs can be interconnected via BNC, RJ45 and AUI. Works with ASANTÉView software (optional) for control directly or remotely.

ASANTÉ Print ..... 349  
An inexpensive Ethernet-to-LocalTalk converter that easily connects one or two LocalTalk peripherals to an Ethernet network. With no switches to set or installation software to load, it is smart enough to work right out of the box. Thick/Thin or Thick/10BaseT.

TechWorks Ethernet Cards ..... 99  
We made a special purchase of TechWorks Ethernet NuBus cards and are offering them on a first-come-first-served basis. Limited to supply on-hand.

Tribe LocalSwitch ..... 2,499  
LocalSwitch is a 16-port intelligent packet-switching hub for Macintosh networks. Using standard LocalTalk protocol and twisted pair wiring, LocalSwitch processes many network transmissions simultaneously.



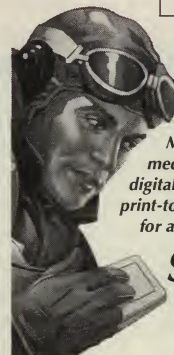
**\$2,499** Tribe LocalSwitch

## Video Monitors & Packages

**RASTEROPS®**  
Sweet 16  
16 Inch  
Color Monitor!  
**\$1,249**



Editing Aces ..... 3,499  
24STV - Multi Media ..... 799  
MoviePak ..... 1,499  
24XLTV Multi Media .. 2,639  
24MxTV Multi Media . 1,649  
MediaTime Multi M. ... 1,499  
ProColor 32 ..... 3,149  
24XLI ..... 1,889  
PaintBoard 24 ..... 1,449  
PaintBoard Li ..... 849  
8XL ..... 499  
ClearVue/Classic ..... 299  
ClearVue/LC ..... 299  
Sweet 16" Monitor ..... 1,249

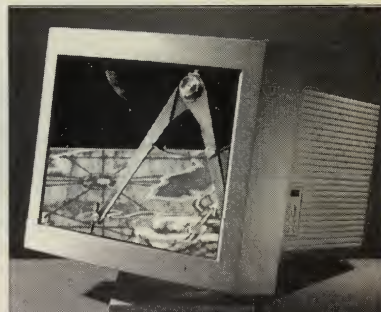


**MoviePak**  
Adobe Premiere Special!

MoviePak works with all RasterOps multi-media display adapters to give you full-motion digital video recording, and full-screen playback and print-to-tape capabilities, all in a single-slot solution for any size Macintosh.

**\$1,499**  
RASTEROPS®

For a limited time, MoviePak includes Adobe Premiere free - a \$695 value!



**20 Inch Color Trinitron!**

**\$1,599**  
Monitor Only

Trinitron Monitor Only ..... 1,599  
Business Package\* - 256 Color ..... 1,799  
Artist Package\* - 16 Million Color .. 2,449

\* Package includes a new 20" Relax Mac compatible Trinitron color monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.

**20 Inch Sampo OfficePro Ila 256 Grayscale!**  
Monitor Only

20" Sampo Monitor Only ..... 599  
Mac II, x, fx, cx, ci Package\* ..... 799  
Mac LC, LCII, SE/30 Package\* ..... 999  
20" Ikegami Monitor Only ..... 799  
Mac II, x, fx, cx, ci Package\* ..... 999  
Mac LC, LCII, SE/30 Package\* ..... 1199

\* Package includes new 20" Mac compatible grayscale monitor, video board, and cable. 72 dpi for WYSIWYG. 1024 x 768.



## Keyboard

**\$99**  
NEW!  
MAK-105 "Tactile Click" ADB interface compatible extended keyboard for Mac SE and Mac II series, 105 keys layout, 15 built-in function keys, Numeric keypad, T-style cursor pad, 6 cursor-control keys and enlarged Return key ..... 99

**CoStar**  
Stingray Trackball  
**\$89**

Stingray Trackball ..... 89  
ADB interface with automatic acceleration. Precision-engineered for accuracy and reliability, and ergonomically designed for maximum comfort and ease of use. Sleek, compact design uses less desk space.

**\$439**  
AddressWriter personal envelope and label printer

AddressWriter Printer ..... 439  
144 x 144 impact dot-matrix print head. Optional label feeder will handle a variety of pin-fed labels for added convenience and value. Specify voltage.

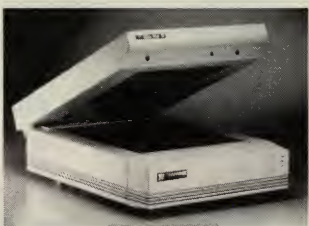
**\$179**  
LabelWriter II & LabelWriter II Plus personal label printers

The LabelWriter II and II Plus use direct thermal input technology to produce high-quality labels in a variety of sizes. The LabelWriter can be attached directly to your computer or AppleTalk Network.

LabelWriter II Mac ..... 179  
Handles up to 350 labels per roll. Maximum label size: 1-1/8" x 3-1/2". Prints one label in 3-1/2 secs.

LabelWriter II Plus Mac ..... 249  
Handles up to 700 labels per roll. Maximum label size: 2-1/4" x 4". Prints one label in 3-1/2 to 7 secs.

## 300/600/800/1,200 dpi Color & Grayscale Scanners



Tamarack 600 dpi Color Scanner \$979 and Slide Attachment \$549

Tamarack 600 Color Scanner:  
24-Bit Color - 8.5" x 11.5" ..... 979  
Slide Attachment (shown) ..... 549  
PhotoShop LE (limited version)\* ..... 99  
PhotoShop 2.0 (full version)\* ..... 199

Relax Color (Epson Engine)  
24-Bit Color Scanner - 8.5" x 11.5" ..... 949  
300 dpi - 110 VAC ..... 1,099  
Color Studio LE (limited version)\* ..... 79  
Color Studio 1.5 (full version)\* ..... 159

Umax Color Scanners:  
UC630\*\* - 8.5" x 14" ..... 1,079  
24-Bit 600 dpi w/PhotoShop ... 1,079  
Transparency/Slide Attachment . 789  
Auto Document Feeder ..... 479  
UC1200S\*\* - 8.5" x 14" ..... 2,999  
24-Bit 1,200 dpi w/PhotoShop 2,999  
Transparency/Slide Attachment . 889

Relisys Color Scanner:  
ColdScan 800 - 8.5" x 14" ..... 1,099  
24-Bit 800 dpi ..... 999  
PhotoShop LE (limited version)\* ..... 99  
PhotoShop 2.0 (full version)\* ..... 199  
\* with purchase of scanner, \*\* includes PhotoShop

**SHARP JX-320 \$999**

16 Million Color - 300/600 dpi

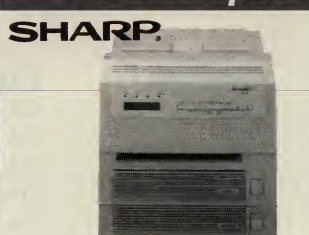
An affordable, quality, flatbed 8-1/2" x 11", 24-bit color scanner for business and professional use. Sharp's patented one-pass system ensures quality color while reducing scan times. 600 DPI using Sharp's proprietary software. By strobing three colored fluorescent bulbs through filters the Sharp system ensures optimal color accuracy and eliminates misregistration for clearer reproduction.

The Sharp JX-320 is the first color scanner fully compliant with the new SCSI-2 standard which eliminates the need for special drivers.

Includes the full version of PhotoShop. OCR compatible. Built-in command set includes: downloadable Gamma Tables; Edge Emphasis; Brightness; and, Lightness. 110 VAC only.

Sharp JX-320 Color Scanner ..... 999  
Transparency Option JX-32F3 ..... 799

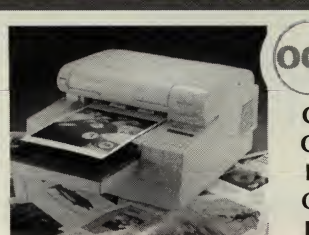
## PostScript Printers



600 dpi Engine, 8 ppm, RISC Processor, AppleTalk on-board. Scalable typefaces (PostScript and PCL5) generating thousands of fonts. Printer emulations include Hewlett Packard, IBM ProPrinter & Epson. Parallel and serial interface with automatic sensing. 2 MB RAM (expandable to 8MB).

**\$1,499**

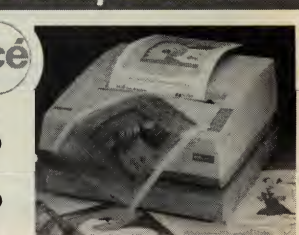
## Mac & IBM Compatible



Four Color PANTONE Matching System • Network Capability

The Océ G5241 puts the power of color PostScript® printing on your desktop using a true Adobe® PostScript interpreter. Using the thermal transfer method, the G5241 prints either 3 or 4 color on letter or A3 size, paper or overhead transparencies at 300 dpi.

**\$1,999**



The Océ G5232 has all the great qualities of the G5241 but increases the printing capability to tabloid size pages at 300 dpi. True PostScript®, 35 Adobe fonts in ROM, downloadable fonts sup-ported. 8Mb Ram, 20Mb hard drive.

**\$2,999**

**RELAX**  
T.E.C.H.N.O.L.O.G.Y.

3101 Whipple Road  
Union City, CA. 94587-1291

We will **BEAT** any competitor's price for comparable product - call for details!

**510-471-6112**

Call or FAX for Fast Service!

FAX 510-471-6267 Hours: 8 a.m. - 5 p.m. PST, Mon.-Fri. VISA, MasterCard, C.O.D. No billing until product is shipped. No surcharge for credit card, terms available for approved accounts. We ship same day via Federal Express.

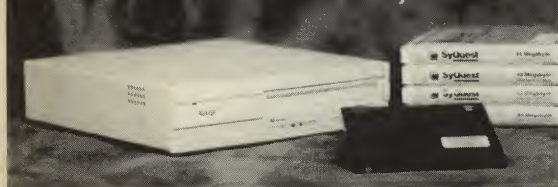


© 1993 Relax Technology, Inc., 3101 Whipple Road, Union City, California 94587-1291. RELAX, FreeLance, Sierra, Mesa, Mobile, Pocket Portable, View II, and Vista are trademarks of Relax Technology, Inc. All Trademarks and Registered Trademarks are the property of their respective holders. Prices subject to change without notice. Not responsible for typographical errors.



## SyQuest Removable Drives

2-Year Warranty!



**\$389** **\$489** **\$579**  
**Mobile 44** **Mobile 88** **Mobile 88+**  
**SQ555** **SQ5110** **SQ5110C**

Reads and writes both  
44 and 88 Meg. cartridges!

Cartridge 1 to 4 5 and Up  
 44 Meg. .... 63 61

Cartridge 1 to 4 5 and Up  
 88 Meg. .... 97 94

FEATURING

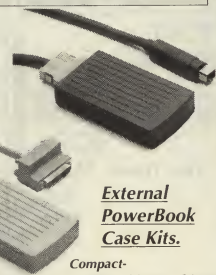
SyQuest  
REMOVABLE  
TECHNOLOGY

Diva Video Shop

Diva Video Shop  
 Plus Megs of  
 QuickTime Movies  
 \*FREE\* on Every  
 Cartridge !!

Desktop performance  
that fits in your pocket!

Our powerful 80MB, 120MB and 160MB  
 FreeLance drives are designed for the  
 Apple PowerBook computers - we even  
 use the same quality drives Apple uses!  
 Light (less than 10 ounces) and fast (17  
 ms seek time), the FreeLance features  
 quiet and reliable Quantum Go•Drive  
 Series™ drives for added value. Includes  
 everything you need to work with the  
 PowerBook including a ADB port power  
 cable and SCSI cable for the Macintosh.

External  
PowerBook  
Case Kits.

Compact-  
 128mm x 75mm x 26mm  
 Compatible with most  
 2.5" hard drives-Quantum,  
 Conner, Seagate.  
 Powered by the Apple  
 ADB Bus with included  
 cable or optional AC  
 adapter. Front panel LED  
 operation indicator. Ex-  
 ternal SCSI ID switch.

## Introducing FreeLance™

## FreeLance Drive Packages:

80 Meg. FreeLance Go•Drive ... 429  
 120 Meg. FreeLance Go•Drive ... 549  
 160 Meg. FreeLance Go•Drive ... 679  
 Includes your choice standard Mac or PowerBook case  
 and a PowerBook or standard Macintosh SCSI Cable.

## Cases and Accessories:

Adapter - DB25M/HDI30 ..... 29  
 Gray Case & ADB pwr. cable ..... 70  
 Platinum Case & ADB pwr. cable .. 70  
 SCSI Cable - DB25M/DB25M ..... 19  
 SCSI Cable - DB25M/Cent50M .... 19

## Macintosh CD-ROM Players

## Kodak Multisession Compatible

\$649



**Toshiba CD-ROM - XM3401B..... 649**  
 Featuring the Multisession Toshiba XM3401B. Vista CD-ROM  
 provides state-of-the-art performance including a sealed con-  
 tamination free environment and an automatic lens cleaning  
 mechanism which dramatically improves reliability. Fast 200  
 milliseconds average access. Full audio control via software is  
 provided by the Music Box software. Includes sample CD.

**Texel Multisession CD-ROM..... 549**  
 Featuring the Texel DM3024. This is a performance drive with  
 235 ms average access and double the normal speed - 300  
 Kbytes/sec. data transfer. Kodak Photo-CD compatible!

\$299

Portable Player

NEC



CD-ROM - Mesa Portable ..... 299

New! Manufactured for Relax by NEC, the Mesa is a fast,  
 portable and fully functional CD-ROM player for music and  
 data. Call for details about this bargain performer.

## Rewritable Optical Drives

**\$1,499**  
**600 Meg.**  
**ISO Optical**

• Industry Standard - ISO Certified  
 • Macintosh - IBM Compatible  
 • Low Cost - High Performance

Large, fast and affordable. We offer a variety of  
 solutions for your large capacity data storage needs.

**600 Meg. Optimum ISO Model 750 . . . 1,599**  
 Premium Quality at Low Cost - 60 ms. access.  
 While Supplies Last - Limited Quantity!

**600 Meg. Ricoh ISO 5030E-II ..... 1,499**  
 Factory reconditioned. Full warranty. 67 ms.  
 access.

**600 Meg. Ricoh ISO 5031E New! ... 2,499**  
 High performance - 35 ms. average access.

**1.0 Gig. Maxoptix Tahiti-II ..... 3,199**  
 High capacity - 1 Gigabyte - 35 ms. average access.

**600 Meg. Pioneer Multifunction ..... 2,199**  
 Rewritable and WORM in one unit.

**600 Meg. Pioneer WORM ..... 1,799**  
 Premium quality, best selling WORM

## Media:

1 to 4 5 +  
 600M 5-1/4" Optical Plastic . 99 95  
 600M 5-1/4" Optical P 5-Pk 475 460  
 600M 5-1/4" Optical Glass . 169 159  
 1.0G Glass, Maxoptix ..... 239 229  
 600M Multifunction ..... 179 169  
 600M WORM, Pioneer ..... 109 99

**128 Meg. Optical**  
**Macintosh &**  
**IBM compatible**  
**\$999**

Each 3-1/2" erasable optical cartridge holds over 120  
 megabytes of data! The **Diablo MO** (shown) is an ideal  
 primary or backup storage device for IBM or Macintosh  
 personal computers. Featuring the Panasonic drive, the  
**Diablo MO** is IBM and SONY compatible - and it's faster!  
 Complete package - includes SCSI cable, On Location  
 software, and power supply.

Includes media, software & cables!  
**128 Meg. Ricoh ISO ..... 1,099**  
**128 Meg. Epson ISO ..... 1,049**  
**128 Meg. Diablo - Panasonic 999**

Verbatim Media:

1 to 4 5 +  
 128 Meg. 3-1/2" Optical .... 44 39  
 128 Meg. 3-1/2" 5-Pk ..... 195 175  
 600 Meg. 5-1/4" Plastic .. 109 105  
 600 Meg. 5-1/4" P 5-Pk .. 495 475

## Hard Disk Drives:

20 Meg. Seagate ST325N ..... 99  
 40 Meg. Maxtor 7040S ..... 169  
 80 Meg. Maxtor 7080S ..... 209  
 90 Meg. Fujitsu M2612SA ... 209  
 180 Meg. Fujitsu M2614SA ... 309  
 210 Meg. Quantum T210S .... 329  
 300 Meg. WREN ST4350NM . 549  
 320 Meg. Fujitsu M2622SA ... 769

330 Meg. WREN Runner ..... 999  
 425 Meg. Seagate ST1481N .. 659  
 435 Meg. Seagate ST2502NM 669  
 660 Meg. WREN Runner .... 1,149  
 1.0 Gig. Maxtor Panther .... 1,249  
 Rewritable Optical Drive:  
 1.0 Gig. Maxoptix Tahiti-I . 1,999  
 Factory reconditioned - 1-year warranty

Save!!

Close-Out Drives

Save Up To 50%

These are one-of-a-kind items at special close-  
 out prices. All include factory warranty.

• 30-day money back guarantee!  
 • Limited quantities  
 • Subject to prior sale!

• Prices are for internal hard disk drives models.  
 For an external case add \$60.

## DAT, ExaByte &amp; Teac Tape Drives &amp; Tape Media

Tape Drives include media, software and cables!

## Tape Drives:

160 Meg. Tape Vista - TEAC ..... 449  
 250 Meg. Tape Vista - Archive ..... 599  
 600 Meg. Tape Vista - TEAC ..... 649

DAT & ExaByte Drives Include  
 Retrospect Software!

## DAT 4 mm Drives:

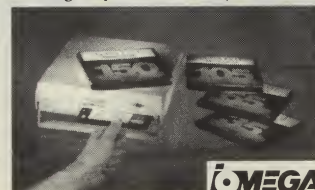
2.0 Gig. DAT Sierra - Archive ..... 1,069  
 2.0 Gig. DAT Sierra - ExaByte DAT . 1,199  
 2.0 Gig. DAT - Hewlett Packard ..... 1,399

## Compression DAT 4 mm Drives:

8.0 Gig. DAT Sierra - Archive ..... 1,359  
 8.0 Gig. DAT Sierra - ExaByte DAT . 1,499  
 8.0 Gig. DAT - Hewlett Packard ..... 1,549

## ExaByte Helical Scan 8 mm Drives:

2.2 Gig. Tape Vista - ExaByte 8200 . 1,799  
 5.0 Gig. Tape Vista - ExaByte 8500 . 2,839



**Omega Bernoulli Mac 150**  
 Includes cartridge,  
 software and cables.

Omega has enjoyed an excellent reputation for  
 years as the provider of high quality removable  
 storage for IBM computers. Now they have  
 brought their years of experience to the  
 Macintosh.

• 150 megabytes of storage in each data  
 cartridge. Includes cartridge, software and cables.  
 5-year warranty on all data cartridges!

Cartridges - \$169

**2.0 Gig.**  
**DAT Tape**

Retrospect  
 software & tape  
 included!

**\$1,199**

EXA-BYTE

## Relax 600 Meg. Tape ..... 649

Selected for performance, value and  
 service. Quality at low cost.  
 Perfect for backing up hard disks up  
 to 600 megabytes. Complete  
 package includes software, cables  
 and media. MACWORLD - 12/92.

MACWORLD  
 EDITORS'  
 CHOICE

Backup  
Tapes!

## Teac Tape Media:

60 Meg Teac CT-600H ..... 25  
 60 Meg Cassette-Verbatim ..... 19  
 160 Meg Teac CT-600N ..... 29  
 160 Meg Cassette- Verbatim ..... 24  
 600 Meg Teac CT-600F ..... 39

## Archive Tape Media:

150 Meg Archive- Verbatim ..... 29  
 250 Meg Archive- Verbatim ..... 33

## 4mm DAT Tape Media:

1.3 Gig DAT 4 mm 60m ..... 25  
 2.0 Gig DAT 4mm 90m ..... 35

## 8mm DAT Tape Media:

8mm DAT-Verbatim 106m ..... 19

## Premium Hard Disk Drives - Macintosh

## Seagate

3-1/2" Half Height Internal External  
 240 Meg. - ST3283N, 12 ms. .... 399 459  
 510 Meg. - ST1581N, 14 ms. .... 939 999  
 1.0 Gig. - ST11200N, 14 ms. ... 1,239 1,299

## 5-1/4" Full Height - WREN

1.0 Gig. - ST41200N, 15 ms. ... 1,179 1,279  
 1.4 Gig. - ST41651N, 15 ms. ... 1,599 1,699  
 1.9 Gig. - ST42100N, 12.9 ms. . 1,799 1,899

## 5-1/4" Full Height - ELITE Ultra-High Performance

1.4 Gig. - ELITE-I, 11.5 ms. .... 1,839 1,939  
 2.1 Gig. - ELITE-II, 11 ms. .... 2,499 2,599  
 3.5 Gig. - ELITE-III, 11 ms. .... 3,389 3,489

## Fujitsu 3-1/2" Half Height

520 Meg. - 2624FA, 9 ms. .... 889 949  
 1.2 Gig. - 2694SA, 8.5 ms. .... 1,649 1,709

## 5-1/4" Full Height

1.2 Gig. - 2266SA, 11.5 ms .... 1,329 1,429  
 2.0 Gig. - 2652SA, 11.5 ms .... 2,279 2,379

## Maxtor 3-1/2" Low Profile/Low Power

120 Meg. - 7120S, 15 ms. .... 229 289  
 213 Meg. - 7213S, 15 ms. .... 329 389

## 5-1/4" Full Height

645 Meg. - XT8760S, 16.5 ms. . 1,299 1,399  
 1.7 Gig. - Panther, 13 ms. .... 1,499 1,599

## Conner 3-1/2" Half Height

42 Meg. - CP-3040, 25 ms. .... 179 239  
 85 Meg. - CP-30080E, 17 ms. .... 199 259  
 120 Meg. - CP30100, 19 ms. .... 259 319  
 170 Meg. - CP-30170E, 17 ms. .... 279 339  
 212 Meg. - CP-30200, 12 ms. .... 359 419  
 545 Meg. - CP-30540, 8.5 ms. .... 899 959

## Hewlett Packard 3-1/2" Half Height

422 Meg. - HP2235, 12.6 ms. .. 1,039 1,099  
 1.2 Gig. - HP2247, 12.6 ms. .... 1,539 1,599  
 5-1/4" Full Height  
 1.2 Gig. - HP97558, 13.5 ms. .. 1,639 1,739  
 1.6 Gig. - HP97560, 13.5 ms. .. 1,999 2,099

## Quantum

3-1/2" ELS Low Profile Internal External  
 42 Meg. - ELS42, 19 ms. .... 179 239  
 85 Meg. - ELS85, 17 ms. .... 199 259  
 127 Meg. - ELS127, 17 ms. .... 249 309

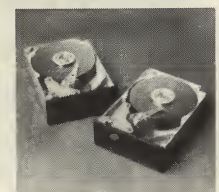
## 3-1/2" PDS, PRO &amp; LPS Series

240 Meg. - LPS240, 10 ms. .... 359 419  
 525 Meg. - LPS525, 10 ms. .... 899 959  
 1.0 Gig. - PD1050S, 11 ms. .... 1,329 1,389  
 1.2 Gig. - PD1225S, 11 ms. .... 1,479 1,539

## 2-1/2" - Internal for the Mac PowerBook only

80 Meg. - Go•Drive GRS80, 17 ms. 299 399  
 120 Meg. - GRS120, 17 ms. .... 359 459  
 160 Meg. - GRS160, 17 ms. .... 579 679

Quantum®



High Performance and exceptional reliability are  
 words commonly used to describe Quantum Hard  
 Drives. The company has maintained a superb  
 record of successes with its line of very fast 3 1/2"  
 half-height and the Go•Drive Series™ for the  
 PowerBook. And now Quantum wants to share its  
 achievements by offering you its proven technology  
 hard drives, two year warranties, and at new low  
 factory prices!

Special Purchase  
Quantum 127 Meg.

ELS127, 17 ms average access.

\$249

External Model \$309.

## Case Kits

Cases are  
 Made by  
 Relax In  
 the U.S.A.

Half Height ..3.5" or 5.25" ..... 89  
 Half Height...with front cut out ..... 89  
 Includes 35 watt power supply, prw cable, fan, SCSI ID.

Full Height...5.25" with front cut out .. 119  
 Includes 55 watt power supply, prw cable, fan, SCSI ID.

Sierra 3.25" ..... 89  
 Includes SCSI cable,  
 SCSI ID & Power Supply  
 For PowerBook or  
 any Macintosh

Portable  
 Case Kit for  
 PowerBook or  
 any Macintosh

Includes SCSI cable & power supply  
 Pocket 3.25" Low Profile ..... 89

## Cables/Terminator

Hi-Quality  
 Molded SCSI  
 Cables

2' AppleDB25 to Cent.50M ..... 9  
 2' Cent.50M to Cent.50M ..... 19  
 6' Cent.50M to Cent.50M ..... 29

TermiGard LED  
 Termination Power  
 Indicators  
 The Best you  
 can buy!

Standard Single Ended Cent50 ..... 9  
 Active Single Ended Cent50 ..... 29

Macintosh  
 Video Cables  
 for On-Board Video  
 or Most Monitor  
 Brands

Mac 15 pin to RGB ..... 39  
 Quadra/Centra 16" or 21" ..... 49

## SCSI Utilities

RELAX Formatting Utility supports Hard  
 Drives, Optical Drives, and Removables.  
 Mac Utilities v1.25 ..... 19

Software Architects  
 Formatter One and  
 Formatter Five offer  
 partitioning, AU/X  
 compatibility, Testing,  
 DOS Support and much  
 more.

Formatter One ..partitioning, AU/X ..... 49  
 Formatter Five ..Dos Support ..... 159

DK Research offers a wide  
 variety of SCSI Software.  
 Support includes, Hard  
 Drives, Optical Drives, and  
 Tape Drives.

Hard Drive ..partitioning, AU/X ..... 39  
 Optical Drive ..partitioning, AU/X ..... 59  
 Tape Backup ..... 59

## PowerBook

CPU software is all the  
 things Apple left out.  
 Manage your PowerBook  
 with these state-of-the-art  
 Utilities. The complete  
 integrated solution!!

Works on all battery powered Macs!  
 Connectix PowerBook Utilities .... 59

Targus carrying  
 cases are known  
 for their quality  
 and good looks.  
 Many models are  
 available.

All Cases are Black with Leather Trim!

PowerBook ..... 59  
 Mac Classic ..... 69  
 Mac Deluxe SE ..... 79

Save!!  
 Relax  
 Weekly  
 Specials

## Hard Disk Drives:

127 Meg. Quantum ELS127 ..... 249  
 Monitors:  
 Ikegami CT20 20"Color  
 (Monitor Only) Demo ..... 1,399  
 Video Packages:  
 Radius Direct Color 24  
 With Radius Quick Color Accel. .... 699

## Tape Drives:

60 Meg. TEAC MT-2ST/45S2 ..... 299  
 2.0 Gig. Wangdat DAT ..... 999

## CD-ROM Drive:

Pioneer DRM 600A ..... 899  
 Scanner:  
 Relax Color Scanner  
 24-Bit (Epson Engine) 110 VAC ..... 949

Relax...you're in good company. Since 1978. 510-471-6112



## Peripherals

## UMAX

UC630 600dpi w/Photoshop v2.5 \$1049.  
UC840 800dpi w/Photoshop v2.5 \$1199.  
Transparency/Slide Adapter \$699.

## CD-ROM

Toshiba Internal W/sw bundle \$539.  
Toshiba External W/sw bundle \$619.  
Texel External W/sw bundle \$559.  
NEC External W/sw bundle \$719.  
Chinon External w/6 CD bundle \$559.

## CD-Rom Software Titles AT COST!\*

## HARD DRIVES

Conner 212mb 12ms Internal \$319.  
Quantum 240mb10ms Internal \$347.  
Toshiba 213mb PBook Internal \$599.  
Micropolis 560mb Internal \$869.  
Fujitsu 535mb 9ms Internal \$789.  
Micropolis 1.2gb 3.5" Internal \$1319.

## Other Drives In Stock! - CALL!!

## MACINTOSH

PowerBook 170-4/40/mdm NEW \$2399.  
PowerBook 140-4/40/mdm USED \$1575.  
LC III 4/80 NEW \$1269.  
Centris 610-4/80/Ethernet NEW \$1799.  
Centris 650-4/80 NEW \$2449.  
Quadra 800-8/230 NEW \$3999.  
Quadra 800-8/500/CD NEW \$5199.

## DAYSTAR DIGITAL

33Mhz PowerCache \$CALL  
33Mhz PowerCache w/68882 \$CALL  
40Mhz PowerCache \$CALL  
40Mhz PowerCache w/68882 \$CALL  
50Mhz PowerCache \$CALL  
50Mhz PowerCache w/68882 \$CALL  
Turbo '040 for CI & most Macs \$CALL

## YOUR MAIL ORDER SUPER SOURCE

**SPECIAL PURCHASE!! - UMAX UC840 & Adobe Photo Shop v2.5 \$1199.00!!\***



**M.P. - Computer**  
Micro Systems

Phone: 408-481-9600 • Fax: 408-481-9604

COMPUTER MICRO SYSTEMS

Providing Quality Macintosh Solutions Since 1986

**800-445-6767**

3004 Lawrence Expressway • Santa Clara, California • 95051

## RASTEROPS - DISPLAYS

15" G/Scale Full Pge for OnBoard \$449.  
21" GrayScale 2 Page Display \$1049.  
16" Sweet 16 Color Display \$1139.  
20" Multimode Display \$1325.  
20" NEW Multiscan Trinitron \$2349.  
21" Color 2 Page Display \$2349.

## RASTEROPS - CARDS

364 - 24bit w/ on screen video & Frame Capture for QuickTime **SPECIAL** \$399.  
8Xi - Affordable 8 bit for up to 21" \$479.  
24mx-24bit up to 16" NEW PRICE \$639.  
24STv-24bit with on screen video \$779.  
PaintBoard Li -24 bit Accel. to 20" \$819.  
8XLi-8bit Accelerated to 21" \$949.  
MoviePak-30fps Frame Capture \$1599.  
Editing Ace Suite-Great Reviews \$3359.

**-System Integration Specialists-  
MACINTOSH SYSTEMS  
BUY - SELL - TRADE  
NEW & USED  
Call for pricing & availability.**

## MEMORY

•Quadra 700, 900, 950 \$CALL  
4, 8 & 16 Meg  
•Centris, Quadra 800, & LC-III \$CALL  
4, 8 and 16 Meg  
30 Pin (Std.) - for most Mac's  
1 Meg SIMMS \$29.  
4 Meg SIMMS \$119.

•PowerBooks  
All Sizes Available

•Macintosh Duo  
All Sizes Available

• Major credit cards accepted  
• Memory guaranteed forever  
• Leasing options available  
• Tech support for customers  
• Int'l clients welcome to buy  
• Fortune & Govt. P.O.s - OK  
• Overnight for A.M. delivery

## LAPIS TECHNOLOGY

•Cards for Mac II family, LC, & SE/30  
ProColor Server 8 bit \$299.  
ProColor Server 8 • 16 (16/8 bit) \$369.  
ProColor Server 24 (24/8 bit) \$469.  
ProColor Server 24x (24/16 bit) \$579.

•1 and 2 Page for Mac + to Quadra 800  
15" Full Page for OnBoard Video \$499.  
15" Full PagePortrait Display w/card \$549.  
15" Full Page Grayscale w/card \$849.  
19" 2 Page Monochrome w/card \$899.  
19" 2 page Grayscale w/card \$1099.

## MONITORS / DISPLAYS

Magnavox 14" RGB w/ Tilt/Swivel \$399.  
1304S 14" Trinitron MultiSync \$589.  
NEC 3fgx 15" MultiSync Display \$639.  
NEC 4fg-E NEW 15" MultiSync \$CALL  
1604S 16" Trinitron MultiSync \$1089.  
Sigma Designs 17" Trinitron \$1295.  
PinPoint 20" MultiMode Trinitron \$1749.  
Philips NEW 20" M/Mode Trinitron \$2199.

## SIGMA DESIGNS

M.P. - Computers has the full line of Sigma monitors & cards - **CALL FOR PRICES!**

## MEDIAVISION

Complete Audio Board & CD Rom Solution  
With CD's AND Speakers **NEW** \$799.

## SUPERMAC

SuperView-Video out for most PowerBooks,  
SE/30's, and Classics **SPECIAL** \$299.

## MODEMS

Supra v32bis 14.4 Fax/Data \$339.  
US Robotics 14.4 Data/9600 Fax \$289.  
Prometheus PBook 14.4 Fax/Mdm \$279.  
App. Engineering PB 14.4 w/Mail \$CALL

\* Call for details!

## Used Equipment

**Mac Iix to IIfx logic board  
upgrade.....\$999.**

**Exchange Parts!!**  
Trade in your old part & save!!!

## Super Deals!!

IInt Logic board.....\$169.  
SE logic board (w/o ROMS).....149.  
Plus Logic bd (w/o ROMS).....149.  
800k floppy mech.....89.  
CRT and YOKE (Used).....49.  
8-bit video board.....99.  
Apple Powerbook fax/modem.69.  
Personal NT logic board.....249.  
Apple 40-meg tape back-up.....199.

**19" Color for Powerbook!!  
Only.....\$1299.**

## Used Systems &amp; Printers

Mac SE 1/20.....\$449.  
Mac LC 2/0.....599.  
Mac II 0/0.....599.  
Mac IIfx 0/0.....949.  
Laserwriter LS.....499.  
Mac IIfx 0/0.....1599.  
Mac Portable 2/40.....\$799.  
Laserwriter IInt.....989.  
Personal L'writer NT.....799.  
Laserwriter Plus.....699.  
Mac Plus.....349.  
Apple CDSC Drive.....199.

## New Macs

Centris 650 4/80.....Call.  
Centris 650 8/230.....Call.  
Quadra 800 8/230.....Call.

## We want your Macs!!

Please FAX your list. (No phone calls please)

**Special of the Week!!**  
New IIfx 4/0.....\$1499.

## Upgrades

IIfx to Quadra 700.....\$Call.  
IIfx to Quadra 700.....Call.  
Mac II to IIfx.....1299.  
Mac IIfx to IIfx.....699.  
Mac IIfx to IIfx.....799.  
Mac SE to SE-30 logic bd.....799.  
Mac SE FDHD upgrade.....299.  
Personal L'writer SC to NT .....249.  
512kE to Plus.....179.



Brand New Mac IIfx 4/0

## Powerbook Specials!!

170 4/40.....\$1999.  
NEW 160 4/40.....2299.  
NEW 160 4/80.....2399.  
NEW 160 4/120.....2599.  
NEW 180 8/120.....3999.  
Carry Bag.....49.  
SuperMac SuperView.....299.

All equipment is used or demo unless otherwise stated.  
Equipment carries a 120-day warranty. Returns subject to a 15% restocking fee.  
Prices subject to change. Prices represent "2% cash discount" off full price.

**Shreve Systems**

1200 Marshall St Shreveport La 71101 FAX 318-424-9771 Tech. 318-424-7987

**800-227-3971**

1-2-3 MAC			We Specialize in International Orders		
			WE WILL MEET OR BEAT ANY ADVERTISED PRICE! CALL US!		
			800-822-4412-201-224-7505 FAX 224-6444		
HARD DRIVE		LOGIC BOARDS	EXCHANGE/UPGRADES		POWER BOOK
QUANTUM LPS					180 4/160.....\$4100
170 MB	17 ms \$320	ci.....895	IIfx to Quadra 800	\$2795	
240 MB	10 ms 395	CX.....495	IIfx to Quadra 800	5095	MAC CPU'S
525 MB	10 ms 999	Q 700.....1395	Mac II to IIfx	1495	Quadra 800 8/230.....\$3767
FUJITSU		Q 900.....1695	Mac IIfx to IIfx	749	IIfx 5/200.....\$1995
520 MB	10 ms 935	!!! SUPER SPECIAL !!!	SE to SE-30 logic bd	449	IIfx CD 5/80.....\$2095
APPLE HARD DRIVES			Powerbk 170 to 180	1594	Quad 700 demo.....\$2250
160	450	SIMMS	APPLE PRINTER		MAC IISI 3/40.....\$850
1.0 Gig	1295	16 Meg	600/630.....\$1950/CALL		Quadra 950 demo.....\$3995
500	895	395	IIntx	895	Quadra 950 4/240.....\$4795

Calling about an ad?  
Say you saw it in MacWEEK.

Leave your mark on volume buyers through  
**MacWEEK's MarketCenter.**

**WANTED: Used Macs!**  
• We'll pay you cash for your used Mac equipment. Guaranteed top dollar!  
• We also sell refurbished Macs at DISCOUNT with a 1-year warranty.  
• Peripherals too! **RENTEX INC.**, Boston, MA (800) 545-2313 "Our 11th year!"

**BUY • SELL • TRADE  
CASH FOR  
YOUR MAC**



**MAD MACS**  
**1-800-756-6227**  
San Diego, California



## Used Equipment

### ALLON COMPUTER

#### CLEARANCE SALE!!!

##### Price Breakthrough!

HP 4m.....\$1895  
HP Scanjet IIC for Mac.....\$950

#### PRINTERS & SCANNERS

HP Paintjet XL 300 (New!).....\$1895  
HP IIP for Mac.....\$995  
HP 7475A Plotter.....\$295  
HP PaintWriter XL.....\$495

#### MONITOR SPECIAL

Radius Precision Color 20.....\$1695

#### MONITORS

SuperMac/RasterOps Dual  
Mode Trinitron.....\$1595  
Radius Precision Color 19.....\$1595  
Radius TPD mono w/card.....\$750

ALL EQUIPMENT SOLD WITH  
90-DAY WARRANTY.

Information: 203/227/6902

Sales: 800/688.5554 Fax: 203/227.8102

#### MULTIMEDIA SALE!!!

Fortune 100 firm cancelled large multimedia project. Equipment virtually brand new. VISA, Mastercard, Corporate POs, CODs Accepted

Quadra 900 4/0.....\$2999  
Quadra 900 20/600.....\$4149  
Quadra 900 20/600/128 MO.....\$4999  
4 meg SIMMS.....\$113  
Apple Ext. Keyboards.....\$129  
Fujitsu 640(4 yr warr).....\$799/int, 899/ext  
PLI Sony 128 Optical.....\$899/int, 999/ext  
Videologic DVA4000 Video Board.....\$1099  
Microtouch 14" TouchScreen Monitor.....\$399  
Quicktel 9600 Fax/Modem.....\$129  
Sony Laserdisc Players-LDP-1450.....\$399  
TI Postscript Printers w/  
Extra Paper Bin.....\$899  
QuadraLink Serial, Dove Serial/Parallel, &  
Silicon Bus Serial Boards.....\$49  
Powerkey Remote.....\$49  
AR Powered Partners Speakers (pair).....\$69  
Kiosk Enclosures.....\$999  
Quadrans are available in any configuration. Many  
new Hard Drive Brands available.

Mediavision, Inc  
303-843-9142  
303-843-9236 (FAX)

## Software/Bar Coding

For those wanting

### BAR CODES THAT SCAN!

For Barcode Generation  
**MacBARCODE**

Contains all the vital features  
for safe, quality bar code  
production and is compatible  
with all major page-makeup  
and graphics software.



For Label Printing  
**label designer**

An easy-to-use, complete Post-  
Script label design & print  
package. Any label size and  
sheet layout including text, bar  
codes, PICT & EPS graphics.

**Computalabel**  
Computalabel Inc. 28 Green Street, Newbury MA 01951 Tel 800-289-0993 Fax 508-462-0993

Give us a call. You will find our  
staff both informative and helpful!

## BAR CODING FOR THE REST OF US

### Bar Code Pro™

The Bar Code Pro™ desk accessory  
creates graphics (EPS or PICT) of the 14  
most common bar codes to place directly  
in your documents. Bar Code Pro™ is an  
ideal, easy-to-use solution for package  
design, labels, libraries, inventory, pub-  
lishing, medical and scientific applications.



"Bar Code Pro™ installs in  
under 60 seconds and takes less  
than 5 minutes to master."

— MacWorld (9/92)

Codes: UPC, EAN, ISSN, ISBN, ITF, 39,  
25, 128, POSTNET/FIM, Codabar  
SYNEX 692 10th St B'klyn NY 11215

(800) 447-9639  
Fax (718)768-3997



## used hard drives!

105 MB  
internal \$99!  
external \$159!

	internal	external
seagate 20 MB	\$79	\$139
Se555 44MB	\$149	\$199
rodime 105MB	\$99	\$159
rodime 210MB	\$249	\$299

30 day money-back guarantee • all necessary cables and  
software included • all external enclosures are new  
caledonian technologies, inc. (407) 750 6828

### CRA Systems Inc.

300 South 13th St.  
Waco, TX 76701

We Buy and Sell New and Used Systems Any Quantity

Call 1-800-375-9000

International Sales 817-754-2120 TeleFax 817-754-2345  
Consultants/Degalers 817-754-2131 Corporate and Univ. PO's Welcome

New Macintosh CPU's (Lc, Si, Ci, Fx, Quadra 700 & 900, Powerbook 100, 140, 170)  
Used & Demo Macintosh CPU's (Se, Se30, Portable, II, Cx, X, Ci, Fx)

#### CLEARANCE SPECIALS

##### LASER PRINTERS

Apple LaserWriter IIxt, IIfx, IIg Call  
Laserwriter Plus w/New Printer Engine \$1499  
Mitsubishi G370-10U Color 300dpi NEW  
w/Freedom of the Press Postscript driver \$3999  
NEC, NewGen, QMS & TI Call  
QMS Colorscript 100-10 Demo \$5500  
QMS PS Jet Plus 8ppm Postscript Laser \$1799  
Xante Controllers From \$1295

600 X 600 DPI Postscript Laser  
AMD 29000 Risc Processor, 7megs, 8ppm From \$2495

##### SOFTWARE OVERSTOCK

Adobe Type Manager \$54  
DiskFit v.1.5 \$45  
Fourth Dimension v.1 (\$6 upgrade) \$299  
Freehand \$349  
MacDraw II (w/free Pro Upgrade) \$279  
MacProject II \$249  
Mac Write II \$99  
Microsoft Works v.1.10 \$155  
PageMaker 3.02 \$375

##### MONITORS

Apple Color & Monochrome Call  
E-Machines Color Page 15" w/8 Bit NEW \$1100  
Mitsubishi 16" 1024 X 768 w/8bit \$1599  
Radius Greyscale & Color Call  
RasterOps Trinitron, 8 & 32bit From \$2999  
Sony 13", 14", 19" Trinitrons Call  
Sony 1908 Industrial Trinitron (New) \$2699  
Sony 19" Trinitron DEMO \$1999  
Supermac 19" Color New & Used From \$1799

##### MISC.

FastPath 4 Ethernet Router NEW \$1199  
Howtek Scanmaster w/Trans Opt. NEW \$3999  
HP Scan-Jet 400 dpi 16GS DEMO \$799  
Laserwriter Plus Upgrade Roms NEW \$399  
Wren 1.2 GIG HardDrive \$1849  
Mirus, Agfa Film Recorders From \$2900  
Raster-Ops 24L 24 bit video board NEW \$1599  
Rodime 210 Cobra SCSI \$699  
Mac II w/040 Accelerator \$3499

CALL US FOR ALL YOUR MACINTOSH NEEDS USED OR NEW

### CDR Technology

10 years in business  
Over 5,000 drives in Stock

#### External Mac Drives 1 year warranty

21MB.....\$119  
32MB.....\$139  
43MB.....\$159  
65MB.....\$179  
81MB.....\$189  
105MB.....\$199  
138MB.....\$219  
304MB.....\$499  
331MB.....\$529  
601MB.....\$799

With Cables, Software & Manual

Phone: 503-626-7104

### SOFT SOLUTIONS

Mac Service Depot • Est. 1983

907 River Road #98, Eugene, OR 97404  
Phone 503/461-1136 • Fax 503/461-2005

#### MAC PARTS (New OEM)

Repair & Upgrade Kits  
Mouse Switches, Cables, etc.  
Same Day Shipping

#### MAC REPAIRS

Including PowerBooks  
Component (Part) Level  
72 Hour Turnaround  
Free Warranty Shipping

#### MAC PEOPLE

Free Estimates • Advice • Referrals  
Larry Pina Repair Books & Software

#### WELCOME

Visa • MasterCard • COD's  
International Orders & Institutional PO's  
• CALL FOR FREE CATALOG •

## Business Mgmt.

### Terminal Emulation

#### MacEmulate®

Use your Macintosh  
instead of a terminal:

Wyse  
TeleVideo  
Hazeltine  
ADDS Viewpoint  
Data General

A fast & full featured  
emulator, with a great  
Mac interface!

\$199 Discount with 2  
or more copies  
Call for info or to order.  
Credit cards accepted.  
Dealer inquiries invited.



Cornerstone Data Systems  
P.O. Box 6260, Anaheim, CA 92816  
(714) 772-5527 Fax (714) 772-2838

What's the most  
cost effective way  
to sell to your  
lucrative audience?

**MacWEEK  
MarketCenter**

## THE PRE-OWNED ERA (1985-Present)



The age of carefully managed resources and efficient use of  
capital. A revolutionary stage in the use and maintenance of  
technology. A period of innovation in used computer  
remarketing begun shortly before the turn of the 21st century.

## Pre-Owned Electronics

INCORPORATED

Specialists in Used Apple & Macintosh Computers,  
Parts & Exchange Repairs. Call for a Catalog.

(800)274-5343 INTL: (617) 275-4600  
FAX: (617) 275-4848

ALL PRE-OWNED ELECTRONICS, INC. TERMS AND CONDITIONS APPLY

# Spend your ad dollars wisely.

Advertise in MacWeek and  
reach subscribers who are  
personally involved in  
purchasing Macintosh  
hardware, software  
and services.

Of MacWeek subscribers:

- ◆ 95% initiate Mac product purchases
- ◆ 95% are involved in selecting Mac brands to buy
- ◆ 79% are involved in selecting purchase source
- ◆ 42% authorize purchases

For more information how your advertising  
can reach these active decision makers, call  
your MacWeek MarketCenter account  
representative today at 800-825-4237.

Source: MacWeek 1992 Study of Microcomputer Product Ownership and Buying Plans



## Desktop Publishing

## Color Scanner Calibration

...Specifically for Adobe Photoshop™ Users.

For some companies, calibration is an afterthought, a sideline. At Southwest Software, calibration is our business. We offer more software calibration products on more platforms than any other vendor. In fact, our software technology for calibrating imagesetters, color copiers and color printers is now patented.\* Color Encore™ for Scanners is just as precise, and easy to use — it's a Photoshop Acquire plug-in.

Southwest Software — the desktop calibration experts. ♦

\$249

Plus shipping and handling and applicable sales tax. MC, Visa, Amex, COD and corporate PO's accepted.



Southwest Software, Inc.

3435 Greystone Drive ♦ Suite 104 ♦ Austin, Texas 78731

Phone orders: (512) 345-2493

Fax orders: (512) 345-2697

\* U.S. Patent # 5,170,257. Photoshop is a trademark of Adobe Systems, Inc.

## Services/General

## Recycle Your SyQuests!

ISOMEDIA is celebrating the anniversary of the Recycle your SyQuests campaign! We can create your PersonalCD for pennies per megabyte.

## Announcing the Professional CD-ROM Backup!

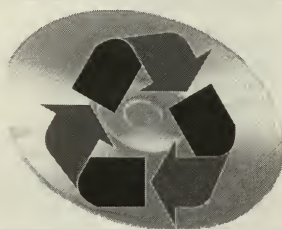
\$250 For: 2 PersonalCD discs, 48 hour turnaround, Free Return Shipping

Call Toll Free! 1-800-468-3939

We've moved! Be sure to note our new address.

ISOMEDIA supports virtually all backup mediums. Call for details.

VISA, MasterCard, Discover, and Purchase Orders accepted upon approval!



ISOMEDIA™

Optical Data Storage Specialists  
2509 152nd AVE NE Suite A • Redmond, WA 98052  
Fax (206) 869-9437 • Voice (206) 869-5411

## Software Production

- Full packaging services
- Duplication, all formats
- EVERLOCK copy protection
- Label and sleeve printing
- 48 hour turn around
- Fulfillment and drop shipment
- Consultation and guidance

**Star-Byte, Inc.**  
2880 Bergey Rd., Hatfield, PA 19440

800-243-1515

## Graphics

Experts in  
Macintosh Slide Imaging

**Nextwave Productions**  
NYC, NY  
NY State Call 212.989.2727 Outside NY State Call 800.445.9002

**Matrix Forte & Chromascript**  
24 hr BBS

24/72 hr service — \$5/\$3.50  
Rush service available  
Volume discounts

Color prints & overheads  
High volume slide duplication  
Scanning & production services

AMERICAN EXPRESS VISA MasterCard

## SlideImagers®

Overnight  
\$495  
Quality Guaranteed

## Digital Output from files

We Offer Slides, Overheads, Hi-Res Neg/Pos 4x5's, 3MRainbow DyeSub, Canon Fiery Laser, Kodak PhotoCD output, Scanning Services, & Large Slide Dupe Runs. Free Technical Support / Most Software Packages.

12- hour service standard. Modern to us your native files by 8 a.m. E.S.T. or send by Priority Air Express, and we'll have the finished product back to you by the next morning. CALL US TODAY!

The BEST Product, Service, Technical Support, and Price!  
(800)232-5411  
(404)873-5353  
22- 7th St • Atlanta, GA 30308

## Programming Services

## BASIC COMPILER

- FutureBASIC™
- Editor, Compiler, Source-level debugger
  - System 7.x compatible - 32-bit clean
  - Writes double-clickable Mac applications
  - Creates INITs, CDEVs, XCMDs, DAs, ...
  - Comparable in speed to C and Pascal
  - Light-years ahead of QuickBASIC™
  - Includes QuickBASIC conversion utility

For more information or a brochure call

800.482.4567

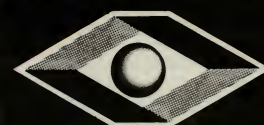
ZEDCOR, 4500 E. SPEEDWAY #22, TUCSON, AZ 85712  
602.881.8101 • FAX 602.881.1841

FUTUREBASIC IS A TRADEMARK OF ZEDCOR, INC. QUICKBASIC IS A TRADEMARK OF MICROSOFT CORP.

## Who's reading MacWEEK?

Serious Buyers.  
95,000 Corporate, government, and academic professionals who buy Macintosh products in volume.

## Repair/Recovery



**HI-TEK SERVICES, INC.**  
Specializing in the repair of all Macs!

"Expect the Exceptional"

We just acquired over \$2 million of Mac inventory to be sold at Wholesale Prices!!

MOTHERBOARDS	FOR SALE
MAC II/IIx	450/750
MAC II CI/CX	900/700
MAC SE/SE30	300/650
MAC Portable	450
MAC II SI Logic Board	500
MAC LC Logic Board	350

Flat Rate  
Volume Discount  
90 Day Warranty  
3-5 Day Turnaround  
Advance Exchange

**DEPOT SERVICES**  
We also repair PS/2's, Compaq, Radius, Wyse and HP.

32950 ALVARADO-NILES ROAD • UNION CITY, CALIFORNIA 94587  
TOLL FREE: 800-285-3508 • PHONE: (510) 489-8909 • FAX: (510) 489-5908

## 800-WE-FIX-MACS

Longer Warranties • 24 Hr Turnaround

128 to Plus Power Supply	\$59
SE & SE/30 Power Supply	\$99
SE & SE/30 Analog Board	\$69
800K/1.4 MB. Disk Drive	\$79/\$99
Mac Plus/SE Logic Board	\$139/175
SE/30 Mac II Logic Board	\$195/225
Mac +/ADB Mouse Repair	\$29/\$39
Mac IIci IIcx Logic Board	\$375
Mac IIsi IIcx Logic Board	\$245
Apple 13" Monitor Repair	\$125
LaserWriter PowerBook	Call!

NOW REPAIRING POWERBOOKS!

We Also Repair Other Mac Parts  
Dealer Inquiries Are Welcome

WE MATCH COMPETITIVE PRICES

(800) 933-4962 Visa/MC (408) 988-2334  
2306-k Walsh Ave, Santa Clara, CA 95051

## MAC HARD DRIVE EXPERTS



**WE CAN SAVE IT!**  
\* Data Recovery \* Drive Repair

## HARD DRIVE CRASH?!

- Certified Class 100 Clean Room
- Courteous, Friendly Technicians
- Syquest, Bernoulli and Optical Drives
- Competitive, Reasonable Rates
- Experts in IDE and SCSI Formats
- Macintosh, IBM and UNIX
- Fast Turnaround/Guaranteed Repairs
- We Specialize in Seagate, Conner, Rodime, Quantum and MiniScribe
- We Sell New and Used Drives

**computer shoppe** (619) 384-4500  
(619) 384-4005 24 Hour Fax

225 Balsam Street, Ridgecrest, CA 93555

DATA RECOVERY EXPERTS!

## THE MAC WIZARD U.S.A.

Model	P/Supply	Logic/Analog Board
128/Mac+	\$55	\$140
SE	\$85	\$160/65
SE 30	\$85	\$215/65
MacII FX	\$200	\$250-\$325
13" RGB	Repair	\$125

## REPAIR WORK ONLY

SIMMS Socket Repair Kit \$24.50

800k/1.4m Disk Drives \$75/95

(415)681-3223

(800)742-4539

422 Judah St. Suite 103 San Francisco, CA 94122  
Volume Discounts Available

Tell your source!

I found it in **MacWEEK**  
**MarketCenter.**

Calling about an ad? Say you saw it in MacWEEK.

What's the most cost effective way to sell to your lucrative audience?

**MacWEEK**  
**MarketCenter**

**MacWEEK** reaches  
95,000 qualified  
Macintosh volume  
buyers at thousands  
of corporate,  
government, and  
university sites.



Over 300 CD-ROM Titles in Stock

# Join the CD-ROM Revolution

We'll meet or beat any advertised price on CD-ROM products. (some restrictions apply)

## CD-ROM Drive Bundles

Get a CD-ROM drive, up to 8 titles, Labtec speakers stereo headphones, cable, power supply \$699!  
Bundles below include a drive, Labtec speakers with A/C adapter, stereo headphones, cable, driver software, power supply and these 8 titles:

CD-ROM Title	Retail Value
1. Color It!	\$299.95
2. Desert Storm	39.95
3. Multimedia Encyclopedia	395.00
4. The Orchestra	79.98

**Texel Bundle DM5024 #D1815, \$699**  
Access time: 265ms, Data transfer: 300k/sec, Reliability MTBF: 30,000  
The Texel CD-ROM drive won the "Buyers Assurance Seal" from Info World Magazine.

**PROCOM CD-MX Bundle #P1933, \$749**  
Access time: 200ms, Data transfer: 327k/sec, Reliability MTBF: 25,000

CD-ROM Title	Retail Value
5. Publish It!	199.95
6. Sherlock Holmes Consult. Det I.	69.95
7. World Atlas	79.95
8. EDUCORP CD Sampler	9.95

### CD Tech T3401 Porta-Drive Bundle #D1824, \$759

Access time: 200ms, Data transfer: 327k/sec, Reliability MTBF: 50,000  
PLUS coupons for 2 FREE multimedia titles (9-10).

9. Multimedia HANDisc.....99.00

10. America Alive.....99.00

**NEC CD-ROM Drive Bundles available, please call.**

## Create Your Own Bundle

"You asked for it, you got it"

When you purchase ANY CD-ROM drive from EDUCORP, you now have the option of creating your own CD-ROM drive bundle! Start your CD-ROM library with the titles you want. Choose from these 31 titles on a variety of subjects.

#	CD-ROM Title	Retail Value
B1.	World Atlas	\$79.95
B2.	Multimedia Encyclopedia	395.00
B3.	Time Table of History	129.00
B4.	Desert Storm	39.99
B5.	Cosmic Osmo	59.95
B6.	Beethoven's Quartet #14	66.00
B7.	Multimedia World Fact Book	49.95
B8.	US History	395.00
B9.	The Orient	49.95
B10.	Sherlock Holmes Consult. Det I.	69.95
B11.	Think for Yourself	249.00
B13.	US Atlas	59.95
B14.	Lucas Game Pack	(bundle only)
B15.	Color It!	299.95
B16.	Publish It!	199.95
B17.	SportsROM	49.95

Choose from 31 CD titles

• Pick any 3 titles listed below for only \$89.95 (code CB3)

• 5 for \$149.95 (code CB5)

• 8 for \$199.95 (code CB8)

\* Only 1 of each title per bundle

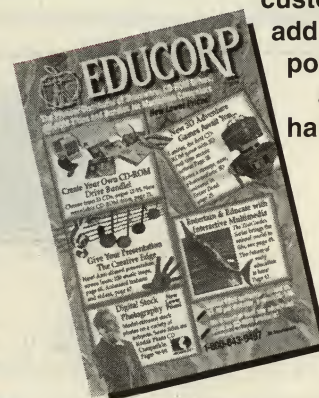
B20.	Manhole	34.95
B21.	Scenic & Nature III.	69.95
B22.	Scenic and Architecture	69.95
B23.	600 Days to Cocos Island	69.95
B25.	Funny: A movie in QuickTime	39.99
B26.	The Orchestra	79.98
B27.	Sports Illustrated- Almanac	59.95
B28.	Word Tales	49.99
B29.	The View from Earth	79.95
B30.	The Animals!	119.95
B31.	Guinness Disc of Records	99.95
B32.	Mayo Clinic Family Health Bk.	99.95
B33.	Interactive Storytime	49.95
B34.	SpaceTime & Art	199.00
B35.	Dictionary of the Living World	149.00

More CD-ROM Drives & Optional Bundles available, please call.

## FREE Catalog

Call 1-800-843-9497 for your free full-color catalog! Foreign

customers add \$4 for postage and handling.



Drives and Bundles

Desktop Publishing

Education

Consumer/Games

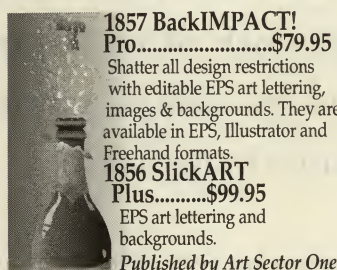
## Stock Photos

1863	African Wildlife	\$79.95
1696	Nature's Way*	59.95
1625	Aquatic Art*	79.95
1822	Ocean Magic	59.95
1585	Ocean Imagery*	59.95
1686	Kids*	99.95
1595	Swimsuit v.1*	99.95
1788	Swimsuit v.2	99.95
1735	People in Business*	99.95
1736	People at Leisure*	99.95
2066	People of the World*	79.95
1813	World Travel v.1	79.95
1814	World Travel v.2	79.95
1581	Int'l Graphics Library*	79.95
1587	Don. Lingerie v.1/2*	99.00
1698	Donatelli Lingerie v.3*	99.00
1334	Prof. Photo Collect.MR*	59.95
1444	Prof. Photo Collect.HR*	99.95

Images same as #1334 in high resolution, 2-CD set. Kodak Photo CD Format.  
Published by Gazelle Technologies, Inc.

## 1680 GraphTec Graphic Designs 2.0.....\$59.95

Over 800 B&W & color EPS images you can edit - saved in Adobe 88 format. Freely manipulate these clip art files in any graphics program that supports Encapsulated Postscript files. The interface allows you to preview all the files, search by key word, or copy files directly to your hard drive.  
Published by Gazelle Technologies, Inc.



**1857 BackIMPACT! Pro.....\$79.95**  
Shatter all design restrictions with editable EPS art lettering, images & backgrounds. They are available in EPS, Illustrator and Freehand formats.  
**1856 SlickART Plus.....\$99.95**  
EPS art lettering and backgrounds.  
Published by Art Sector One

## 1408 Design Toolkit.....\$99.95

This is the premier collection of EPS art graphics and TIFF images. Each of the more than 1500 B&W EPS images and TIFF's are professionally created. Editable in any program that supports Illustrator and Freehand files or TIFF manipulation.  
Published by Gazelle Technologies, Inc.

## 1990 Wraptures Two...\$95

NEW! 150 more beautiful seamless tile-able PICT textures and backgrounds. You'll also find several animated textures in QuickTime format. Map to 3D objects or tile to create multimedia and presentation backgrounds.

**1653 Wraptures One**  
120 textures .....\$95  
Published by Form & Function

## 1003 DTP Bundle.....\$149.95

Reach your audience with royalty-free digital stock photography, clip art, fonts and more! Get 4 CD-ROMs in all - People at Leisure, International Graphics Library, Desktop Publishing CD 2.0, and Ocean Imagery. One bundle per customer only.  
Published by Gazelle Technologies, Inc.



## Multimedia

### 1659 WraptureReels One...\$179.95

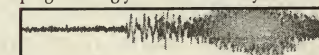
A CD-ROM library of seamlessly looping, broadcast-quality animated textures and environments in QuickTime (JPEG) format.



Each clip comes in 32bits, 640x480 or 320x240 at 30 frames/second.  
Published by Form & Function

### 1582 Sound/FX 225 sounds ...\$99.95

Expertly recorded and mixed. The tremendous diversity in styles and moods is exactly what you need for the variety of programming you do. Great for your



animations and multimedia presentations. From birds singing to telephones ringing, choose from 13 categories.  
Published by Gazelle Technologies, Inc.

## 2078 Animal Alphabet....\$59.95

Colorfully animated, this engaging program is designed to help young children learn letters and words with QuickTime videos, narration. Animal Alphabet is an ideal multimedia tool for your children to explore letters and words. Designed for children ages 3 to 7.  
Published by REMedia



## 1924 ABC Songbook .....\$29.95

Sing along with Ramblin' Rico as you learn your ABCs, as well as improve your reading skills. This CD will entertain you from A to Z as you hear a cute story related to each letter of the alphabet. Meet Kevin Kawaski Kamakazi Kid from Kansas! Have fun with these rockin' tunes through all 26 letters.  
Published by Gazelle Technologies, Inc.



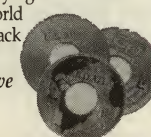
## 2081 ZooGuides v.1-Butterflies of the World.....\$59.95

Butterflies are a delight to people of all ages. You'll find the detailed introduction fascinating as it reveals the secret habits and life history of these colorful insects. Over 300 color illustrations and 50 video sequences.  
Published by REMedia



## 84 Atlas Fun Pack.....\$79.95

This FUNtastic Exclusive features 3 great CDs for one low price. You buy World Atlas and U.S. Atlas for only 79.95 and get the Lucas Game Pack FREE. That's right, when you're done studying the U.S. from coast to coast or the world from pole to pole, sit back with the game pack.  
EDUCORP Exclusive



## 1300 EDUCORP Shareware CD 7.0...\$199.00

Get \$50.00 OFF with purchase of a CD-ROM drive. Over 1 gigabyte of software. A 2 disc set loaded with the best public domain & Shareware software available. There's something for everyone in this collection. So, when you're hunting for that specific file for your next project, turn to the EDUCORP CD 7.0 first.  
Published by EDUCORP



## 2089 Lunicus.....\$79.95

Brought to you by Bill Appleton, the creator of Creepy Castle and SuperCard. Interactively cruise through 3D environments in REAL time. Walk up to other characters and talk to them face to face. Watch real-time fire fights with dozens of computer controlled opponents. Lunicus presents all the action from an utterly convincing 3 dimensional point of view. This is the first true arcade action game on CD-ROM.  
Published by CyberFlix



## 1583 Spaceship Warlock...\$69.95

Robustly detailed and dazzling in its sweep and depth, Spaceship Warlock is a blazing, swashbuckling, epic in the grand tradition!  
Published by Reactor



## 2068 The Journeyman Project .....\$69.95

Journeyman represents the next generation in interactive entertainment.  
Published by Presto Studios



## 1677 ClipTime v.1.....\$79.95

Bring your multimedia project alive! ClipTime v.1 contains over 250 QuickTime movies on subjects such as aerials, medical, sports and more..



## 1919 ClipTime v. 2.....\$199.00

"American Media" brings you over 300 high-quality movies, photos & sounds focusing on an American theme.  
Published by ALPHA Technologies, Inc.



# EDUCORP® 1-800-843-9497

7434 Trade Street • San Diego, CA 92121 • Info 619-536-9999 • Fax 619-535-2345



• Order toll-free in the U.S. and Canada.  
• You'll get a FREE catalog and access to our Technical Hotline w/any purchase.  
• Prices subject to change without notice.  
• Dealer inquiries welcome.



## Accessories

**Custom Mouse Pads**

TEXTURED LEXAN® SURFACE  
Your Choice  
of Pad &  
Logo Colors



QUALITY  
GUARANTEED  
• (612) 665-3284  
• FAX: (612) 665-2604  
**MicroStore™**

**800-962-8885**

## How can you afford to reach 95,000 Macintosh Volume Buyers?

With MacWeek MarketCenter. Call your MacWeek MarketCenter account representative at 800-825-4237, for information about size and color options priced to fit your advertising budget.



## Career Opportunities



### Exciting Opportunity ...

ACI is the international publisher of 4<sup>th</sup> Dimension, the best-selling database for the Macintosh. 4<sup>th</sup> Dimension and our other products provide a powerful and user-friendly database management environment. We have recently released major upgrades to our product line including a new product called 4D Server. Sales are brisk and the call load into Technical Support has increased accordingly. Consequently, ACI currently has an opening for the following position:

## Technical Support

Candidates must have a minimum of one year of 4<sup>th</sup> Dimension experience. It is preferred that you have designed several functioning databases and have a good working knowledge of the 4<sup>th</sup> Dimension language. Multi-user experience and knowledge of other ACI products is preferred. Equivalent experience in Technical Support for a similar product will be considered. If you would like to join a progressive company on the leading edge of technology, apply today for consideration.

#### Send resume to:

ACI US, Inc. Human Resources  
10351 Bubb Road Cupertino, CA 95014  
or fax (408) 252-0831 AppleLink: D4444

*We are an equal opportunity employer.*

# No Masquerade

Ever wonder how some recruiters always unmask the most qualified computer talent in Fortune 1000 and technical sites?

CAREER OPPORTUNITIES uncovers the best talent for them. It's a network of two computer newspapers—each recognized by computer professionals as the #1 information source in its field.

PC WEEK takes their recruiting message to 230,000 qualified computer-involved prospects with micro, mini, mainframe and networking experience. Consider passalong readers and the number jumps to 780,000.

MACWEEK, the only weekly of its type, attracts 95,000 Macintosh specialists. And passalong readership pushes the number to over 300,000.

If you'd like to bring more high-caliber professionals out of hiding, call your account representative today at (800) 825-4237. It's time you discovered who they are.

## Career Opportunities Information

For more information about placing an ad call your account representative at (800) 825-4237

Send all camera ready artwork to:  
MacWEEK Career Opportunities  
One Park Avenue, 3rd Floor  
New York, New York 10016  
Telecopier: (212) 503-5002  
Ad Closing: Thursday, 5 PM (EST)  
11 days before issue date



## Security *From Page 1*

AOCE (Apple Open Collaboration Environment).

But Apple's representative at the NSA briefing, Gursharan Sidhu, technical director of collaborative computing and leader of the AOCE project, said he is not worried that the government will force an encryption scheme on the industry.

"We were given the impression that they are very open to suggestions," Sidhu said, adding that the government is faced with a growing conundrum as it tries to simultaneously protect privacy and maintain its ability to tap law-breakers' communications.

"People have the idea that in cellular the security of communications has gone away, so there is pressure to encrypt. [Without a back door], even the casual criminal would be able to communicate with invincible security," Sidhu said. "Law-enforcement agencies wouldn't be able to collect intelligence."

A spokesman for NIST said Capstone will not be introduced unless the president's review of national encryption policy concludes it is needed. But he also said the Department of Defense and NSA are already working to develop a PCMCIA card-based implementation of Capstone for a classified defense messaging system.

The NSA confessed it is working on Capstone but could not confirm the Capstone PCMCIA card project.

Clipper and Capstone use a "key escrow" technology that lets law-enforcement agencies with a court order unscramble conversations and documents (see story, this page). To reduce the potential for wiretap abuses, two agencies to be named by Attorney General Janet Reno will hold half of each key. The NSA said the key escrow agents will not be law-enforcement agencies.

Privacy advocates complained that the algorithms that perform Clipper scrambling functions will remain classified. Encryption technologies typically gain acceptance only after cryptographers pore over

## Plan keeps encryption keys in escrow

The White House last week said the Clipper chip will use a key escrow scheme to guarantee the public a maximum amount of privacy without shutting out law-enforcement agencies that need to tap criminals' communications.

Key escrow involves the splitting of encryption keys into two pieces, each of which is held by an independent agency. Police with a wiretap order must retrieve both parts of the key to listen in on voice and data calls.

The escrow scheme, true to its Cold War heritage, is full of cloak-and-dagger drama. The National Institute of Standards and Technology and Professor Dorothy Denning, chairwoman of the Georgetown University computer science department in Washington, D.C., described the process:

Clippers will be programmed in lots of about 300 chips. Agents of the two escrow agencies — as yet unidentified — will meet in a secure computer-information facility, known in spy circles as a SCIF, a

vault at the chip manufacturer site that contains a laptop computer and chip-programming equipment. Each agent enters into the computer a long prime number that is used to generate 300 keys.

After a series of mathematical contortions, the two agents create three floppy disks. Two of them each contain one-half of the 300 device keys and a master key, called a "family key" by the National Security Agency, needed to decrypt messages sent by all the chips in the lot. The third floppy contains a list of whole encryption keys, and it is used to program the lot of Clipper chips.

Then the agents leave the SCIF carrying a floppy with their half of the keys, the master floppy is destroyed and — for extra security — the laptop computer can be destroyed.

Clipper chips will be manufactured by Torrance, Calif.-based Mykotronx Inc. and other companies that agree to adhere to the NSA's security standards. — *By Mitch Ratcliffe*

the component algorithms and key management systems.

"We can't protect the key escrow features if we reveal the algorithm to the public ... that's caused some heartburn," said John Podesta, staff secretary to President Clinton. "I'm not suggesting that the public should trust us any more than any other government agency, but we are doing a more comprehensive review [than any previous administration]."

Podesta said the Clinton team is taking a free-market approach to encryption, in contrast to previous administrations, which tried to legislate simplified approaches.

"In the wireless communications environment, we have to move the ball forward on security and privacy," Podesta said. "The jury's still out on whether [Clipper] is the answer."

Jim Bidzos, president of RSA Data

Security of Redwood City, Calif., said the NSA is using Clipper and Capstone in an attempt to confuse the market for privacy-enhancing technologies. "It takes three or four years for this kind of proposal to die," Bidzos said. Computer and communications companies might withhold support for any standard, giving the NSA more time to prepare for the encrypted world, he said.

Computer Professionals for Social Responsibility, a Washington, D.C.-based public-interest group, has filed 11 Freedom of Information Act requests for access to Clipper development records. The group suspects the NSA and NIST violated the Computer Security Act of 1987, which limits the NSA's role in development of public encryption technologies to providing advice and assistance. NSA said it developed both chips. □

## Analysis *From Page 1*

according to the theory, corporate information systems managers might be willing to consider the merits of the Mac interface, especially when it comes with the support of a company as respected and entrenched in the business market as Novell.

"They [Apple and Novell] don't imagine that they will obsolete Windows," one source said, "but they are looking for feedback on how to best target users moving from DOS to a GUI."

The other targeted users are those who now run Microsoft Windows 3.1 but expect to move to Windows NT. According to sources familiar with the Apple-Novell project, the companies believe a taste of the Mac, combined with NetWare services, might win over even dedicated Windows users and their managers.

But analysts questioned how many PC users and managers are really looking for an alternative to the Microsoft environments and whether Apple and Novell will be able to persuade even the open-minded to switch to their new environment.

"The critical factor that will determine their success," said one developer, "is how many of the well-known, mission-critical, horizontal market applications will run on this machine on Day One."

Although DOS applications will run in the Apple-Novell environment, as of now Windows applications apparently will not. Unless that changes, the two companies will be in the difficult position of asking users to give up access to the most innovative applications

now being written for the PC.

The only way to fill that gap will be to coax Mac developers to port quickly to the new Intel environment. But many Mac applications are not yet readily portable, and some Mac developers — already facing the transition to the PowerPC — are certain to hesitate at the cost of porting to another platform with uncertain market prospects.

"I don't think anyone has dealt with the implications of maintaining applications on all these platforms," another developer said. "It's a very simple vision but not a very simple real-world solution."

Raising the cost of supporting applications could even play into Microsoft's hands, according to a developer. "You have to be a company the size of Microsoft to support these investments, so it's to Microsoft's advantage in the long run," he said.

Analysts also pointed out that it will be difficult for Apple and Novell to preserve the charm of the Mac, a system that has always depended on closely integrated software and hardware, when they don't control the hardware.

Bill Bluestein, a research analyst at Forrester Research Inc. of Cambridge, Mass., said he thinks the best prospects for Apple and Novell are not primarily PC sites.

"The market is companies that have made a major commitment to the Mac but have a lot of PCs," Bluestein said. "If this thing works, they could have the same interface on all machines and have the option of buying less-expensive PC hardware." □

## PowerPC *From Page 1*

\$374. Apple, as the largest early customer for the chips, is likely to pay far less, sources said.

Intel said Pentium pricing will not be announced until next month, when the chip ships. But industry sources said the Intel processor is likely to cost at least twice as much as PowerPC in comparable volumes.

The price differential is largely a reflection of the chips' die sizes. The PowerPC 601 measures 11 by 11 millimeters, while the Pentium, accord-

ing to Intel, is 16.8 by 17.6 millimeters. Smaller size also means lower power consumption: The 66-MHz Pentium is rated at 13 watts, while the PowerPC 601 will draw 6.5 watts at 50 MHz and 9 watts at 66 MHz.

"It's hard to evaluate the benchmarks without more details than they've provided about the systems they're testing on, but the numbers do look impressive," said Michael Slater, editor of the Microprocessor Report in Sebastopol, Calif. "There's nothing else in this performance class at prices like those." □

## Pen Mac *From Page 1*

provide some of the recognition technology that will allow certain pen Mac models to convert handwriting to editable text within any application. CIC developed Pen-Mac, a forthcoming set of extensions that add pen input and handwriting recognition to the Macintosh operating system (see MacWEEK, Jan. 18).

Third-party developers will have to customize their software to include gesture-based commands in their programs' interfaces, however.

Apple reportedly will unveil a pen application programming interface for ink at next month's Apple Worldwide Developers Conference in San Jose, Calif. Sources said Apple is also working on a tool kit for in-house developers to add pen support to their applications.

The new portable will be the first Mac model not sold retail. Sources said the federal government is on Apple's list of potential buyers.

The pen-based device is intended specifically for vertical markets. For example, it could be used for medical record keeping, forms entry or

check-list applications for retail salespeople.

Apple reportedly is looking at a number of other pen-Mac prototypes. One model, based on an upcoming low-power version of the 68040, diverts CPU cycles from screen updates when the user takes notes to speed handwriting recognition.

Sources said Apple is also considering equipping future nondocking pen-Mac models with infrared communications hardware similar to Hewlett-Packard Co.'s 95LX palmtop computer. □

### PowerPC vs. Pentium

#### PowerPC 601

**Die size:** 11x11 millimeters

**Transistors:** 2.8 million

**Process technology:** 0.65 microns

**SPECmark92 performance at 66 MHz:** Integer 60; floating point 80

**Price:** \$280 (50 MHz); \$374 (66 MHz)

#### Pentium

**Die size:** 16.8x17.6 millimeters

**Transistors:** 3.2 million

**Process technology:** 0.8 microns

**SPECmark92 performance at 66 MHz:** Integer 64.5; floating point 56.9

**Price:** \$700 to \$950 (est.—66 MHz)



## Apple-Novell

From Page 1

in San Jose, Calif., next month. The collaboration will not be formally announced until fall.

The new software, based on an Apple project code-named Star Trek (see MacWEEK, March 22), is intended to provide a graphical-interface alternative for DOS users who might otherwise upgrade to Microsoft Windows or the upcoming Windows NT operating system.

The first version of the software will provide

the System 7 interface, a QuickDraw emulator and support for QuickDraw GX, a translator that maps Apple's hierarchical file system to the DOS directory structure, and integrated AppleTalk and NetWare network services.

It will lack support for Apple events; QuickTime; the Data Access Manager; the Edition Manager; the Macintosh Communications Toolbox; and hardware not found in standard Intel systems, such as SCSI, NuBus and the Apple Desktop Bus.

The software, however, will include an extension mechanism, and ports of QuickTime, AppleScript and AOCCE (Apple Open Collaboration Environment) to the environment are slated for the second half of next year.

The linchpin in the system will be a translation layer between the ported Macintosh Toolbox and DR DOS. When ported Mac applications call routines in the Toolbox, it will translate the calls and pass them to DOS if necessary.

All the tools needed to port Mac applications written in C and C++ to the Apple-Novell environment are available now on standard DOS platforms. The partners plan to anoint a suite of DOS development tools as "canonical," including Metaware Inc.'s High C/C++ 386 compiler and mdb debugger and Phar Lap Software Inc.'s 386Link object linker, sources said. Developer documentation is due this summer.

Apple officials reportedly believe that porting the Mac OS to Intel-based computers will increase the number of programs that run in native mode on upcoming PowerPC-based Macs because the lure of the huge DOS market will give Mac developers an incentive to make their code portable. Software ported to the Apple-Novell environment will also be portable to the PowerPC — and to other RISC processors Apple may support in the future.

The Companion name is designed to help Apple establish a single identity for its expanding suite of cross-platform technologies, so when a user wants to run a QuickTime movie on an Intel machine, something like a "Companion-inside" label will let them know the computer can support it.

For the long run, Apple, IBM Corp. and their joint offshoot, Taligent Inc., are working on kernels that will provide an almost universally portable user environment. The kernels will act as hardware interface in the place of current OSes, and application programming interfaces such as the Mac user interface will be added as modules that run on top of these kernels.

Sources said the Mac interface may also change, so much so that by 1996 the Finder could be unrecognizable to the user of today. David Nagel, the Apple executive who took charge of the Macintosh Software Architecture Division early this year, is reportedly pushing for an overhaul of the Mac graphical user interface on all platforms; in part, Nagel is said to believe the interface should be modernized to incorporate new ideas developed by the company's Advanced Technology Group, which he continues to lead.

In addition to building in QuickTime, AOCCE, AppleScript and other extensions, the update would incorporate a new Finder metaphor and an object-oriented, compound-document architecture.

These future versions of Apple's OS will reportedly provide context-sensitive views of network services and information. A context-sensitive Finder might switch to a newspaper interface when the user requests articles on a competitor or a real-time trading terminal when the user requests a stock report.

Novell seems to have embraced this vision. Sources said the Finder will ultimately become the interface to NetWare services, output devices and resources such as databases.

Apple and Novell declined to comment. □

Andrew Gore and Henry Norr contributed to this report.

# This used to be a full page ad

Seems everyone's working more and more for less and less these days.

Except our loyal StuffIt users.

The more they work with the Eddy award-winning StuffIt Deluxe, the more free disk space they have.

The more they Stuff files before sending them via modem or network, the more time they save.

It's also so much more easy to use. Making an archive is as simple as adding ".sit" to an item in the Finder. Presto! An archive.

What's more, our transparent compression tool, StuffIt SpaceSaver, is included free with each StuffIt Deluxe.

StuffIt Deluxe even gives you access to more than just StuffIt archives, including PC (Zip and Arc), Unix (tar and compress), and Macintosh .cpt files.

All of which explains why more people use StuffIt compression technology than any other and have for over five years.

So call (800) 732-8881 ext. 10 now to order StuffIt Deluxe 3.0 for a special price of \$59.\*

Even less in quantity.

How can we afford to do this? Because we can spend so much less on advertising.



## Advertiser index

Agfa Prepress Education Resources.....	77
Airbourne Computer Tech.....	82
Aladdin .....	128
Apple.....	8-9, 17-19
Applied Engineering.....	7
APS .....	83-85
Asanté.....	21
ASD Software .....	76
Brother .....	74
Caere .....	73
Claris .....	11
ClubMac.....	94-95
Cypress Research .....	76
Datawatch .....	16
Dayna Communications .....	23
DayStar .....	2
DCA.....	63
Deneba Software .....	76, 131
Digital Equipment.....	27
Educorp .....	125
Embarc/Motorola .....	75
Farallon .....	132
Fifth Generation .....	45
Focus.....	35, 51
Fusion Data Systems .....	77
Hardware That Fits .....	90-91
Hewlett-Packard .....	5
InterCon Systems.....	76
International Mac Specialists .....	117
La Cie.....	31, 64, 98-99
Lapis Technologies .....	47
Leader Technologies .....	76
Mac & More.....	81
Mac & PC.....	86-87
Mac Center .....	102
Mac Direct .....	100-101
Mac News .....	103
Mac Xtra.....	112
Mainstay.....	52
Mass Microsystems.....	57
MegaHaus.....	119
Memory Direct.....	110
Memory Plus.....	113
Microsoft.....	38-39
Microtech .....	79
Mitsubishi .....	69
MSA .....	77
NEC Technology.....	29
Newer Technology .....	130
NewGen.....	70
Now Software .....	10
Peripheral Outlet.....	111
PRDS .....	77
PrePress Direct.....	30
PSI Integration .....	49
Radius .....	33, 54
Relax Technology .....	120-121
S.A.G. Electronics .....	118
Seiko.....	53
Sonic.....	15
Spin Peripherals .....	96-97
SuperMac .....	25
Syex .....	92-93
Synergy Software.....	77
Technology Works .....	108
The LLB Company .....	104-107
Tribe Computer Works.....	71
USA Flex.....	89
WordPerfect .....	66-67
Xante.....	88
Xinet.....	77
Ziff Institute.....	78



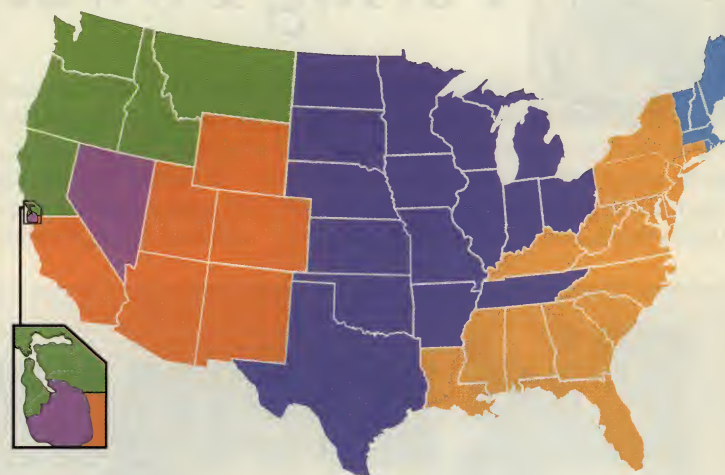
## Products mentioned in this issue

ACCOUNTING	
Capital Transactions Total Collections 1.7	12
SBT Accounting Systems Database Accounting Library	14
COMPUTERS & SYSTEM SOFTWARE	
Apple QuickTime 1.6, System 7.1 upgrade kit, Sound Manager 3.0	3
Apple QuickTime 1.5	3, 12, 72
Apple Open Scripting Architecture	6
Apple Quadra 950	22, 28
Apple ColorSync	3, 28
Apple Apple Software Volume Licensing Program, CD-ROM-based Upgrade Kit, DAL Client, MacTCP	36
Apple AppleTalk Remote Access	36, 41, 61
Apple PowerBook 170, PowerBook 180	41
Apple 32-Bit System Enabler	72
Motorola PowerPC 601	1
DATABASES	
Microsoft FoxBASE+	14
DTP & TYPOGRAPHY	
Archetype Image Engine	26
COPS PServer Advanced Document Server	26
EDUCATIONAL TOOLS	
Tectrix Educational manuals	12
GRAPHICS SOFTWARE	
Adobe Photoshop	14, 24, 28, 48, 55, 60
Adobe Dimensions, Illustrator	58, 60
Aldus SuperPaint, Gallery Effects	60
Apple MacDraw I, MacDraw II	60
Broderbund Software BannerMania	48
Colossal Graphics PS Nova, PowerScript Digital Color Printing System	48
Deneba artWorks, Canvas, UltraPaint	60
Fractal Design ColorStudio	28
Fractal Design Painter	24, 60
Fractal Design Sketcher	60
Electronics for Imaging Cachet	28
Maki Software CartoonSketch	26
Quark QuarkXPress	48, 55
Ray Dream addDepth, Designer	58
S.H. Pierce & Co. PosterWorks	48
Xaos Tools Paint Alchemy	24
GROUPWARE	
Antley Business Systems ABSI-Docs	6
Pacer Software PacerForum 2.0	22
INPUT DEVICES	
IntelliTools IntelliKeys keyboard	12
INTEGRATED PACKAGES	
Claris ClarisWorks	55, 60
Microsoft Microsoft Works	60
MONITORS & DISPLAY CARDS	
Mirror Tech. ProView Trinitron Display	65
Mitsubishi Multimode monitors	65
Nanao USA Multimode monitors	65
NEC Technologies Multimode monitors	65
Nutmeg Systems Gray-scale monitors	65
Radius Radius PrecisionColor 24X Interface display card	24
Radius VideoVision card	28
RasterOps 20T Multiscan Color Display, CorrectColor/20T	65
Seiko Instruments multimode monitors	65
Sigma Designs MultiMode 120	65
Sony Digital Control Trinitron Monitor GDM-2038	65
SuperMac SuperMatch High-Res 20 Trinitron Display, SuperMatch 20•XL	65
MULTIMEDIA	
Alias Open Digital Studio, Alias Animator, Alias PowerAnimator, AliasTime utility	26
Apple Apple Desktop Seminar Toolkit	12
Gryphon Software Morph	28
Media Vision CD-ROM Multimedia Kit	10
Passport Designs Producer	28
RasterOps 24STV video board	72
NETWORKS	
AG Group EtherPeek 2.0, LocalPeek 2.0	20

Apple Likewise	4
Apple MacTCP 2.0, TCP/IP Connection, TCP/IP Administration for Mac	20
Apple Workgroup Server	14
Caravelle Networks PagerPro	20
CE Software QuickMail	14
Dayna Communications DaynaSTAR Hub-24, Network Vital Signs, DaynaSTAR Hub-12, EtherPrint print server, EtherPrint Plus, EtherPrint-T Plus	20
Digital Communications MacMainFrame Workstation, MainPrint, IrmaWorkstation for Mac, MacMainFrame Gateway, Netway 2000	20
Engage Comm. Concorde Express	22
ExMachina Notify!	20
Farallon Computing Ether 10-T StarController, StarController EN, Ether 10-T StarController/557, StarCommand 3.2, NetAtlas 2.0, EtherMac adapters, Transceivers, EtherThin, Ether 10-T transceivers	20
InterCon TCP/Connect II	20
Network General Sniffer	20
Novell NetWare server	4, 14
NUMERIC TOOLS & CHARTING	
Microsoft Excel	12
ORGANIZATIONAL TOOLS	
After Hours Software DateBook, InTouch	55
Now Software Now Up-to-Date 2.0	55
ON Technology Meeting Maker	55
Pastel Development DayMaker 2.0	55
Portfolio Software DynoPage Lite	55
POWERBOOK UTILITIES & ACCESSORIES	
Connectix CPU 2.0	4
Palomar Software On the Road	61
PRINTERS & PRINTING TOOLS	
Adobe Adobe Type Manager	41
Adobe PostScript interpreters	40
Adobe PostScript Level 2	50
Apple FinePrint	40
Apple PhotoGrade enhancement	40, 44
Apple ImageWriter	44
Apple LaserWriter Pro 600, Pro 630	40
Apple LaserWriter Select 300, Select 310	44
Apple LaserWriter SC, IINT, IINTX, IIf, IIG, LS, Personal LaserWriter NTR controller	46
Apple StyleWriter, StyleWriter II	41, 44
BDT Products Ergofeed sheet feeder	46
CalComp CCL-600	40
Canon LBP-BX engine, BubbleJet	40, 41
Colorcops CP4007	24
Compaq Pagemarq 20, Pagemarq 15	10
Dataproducts LZR 965	40
DEC DECtaser 1152	44
Digital MainPrint CX, IrmaPrint2	20
GCC Tech. SelectPress 600	40, 50
GCC Tech. WriteMove I, WriteMove II	41
GDT Softworks PowerPrint	44
Genesis Technology Jet-Tray 1500	46
Gradco (USA) HCF-1000	46
Hewlett-Packard LaserJet 4, 4M	40
Hewlett-Packard PaintJet	50
InCad NovaJet	48
Kodak Diconix 150M	41
Kodak Diconix 180si, Diconix 701	41, 44
LaserMaster 1200XL, Unity 1200XL	40
Lexmark IBM LaserPrinter 4029 10A	40
Lexmark IBM Color Jetprinter PS 4079	50
Mannesmann Tally MobileWriterPS	41
Microsoft TruImage	50
Mitsubishi dye-sublimation printer	48
NewGen Systems TurboPS/660 B, TurboPS/1200 B	40
Orange Micro Grappler II	44
Palomar Software Plottergeist	61
Phoenix Technologies PhoenixPage	50
Pipeline PowerPage PostScript interpreter	24

Printware Professional-II	40
QMS Model 2000, 860 Print System, 1725 Print System	40
QMS RISC-based Adobe PostScript Level 2 laser printer	24
Quintar Q-Script 2000 printer controller	24
Sonnet Technologies FontCard NTX	46
Tektronix Phaser IISD dye-sublimation printer, Phaser IISDX, TekColor PS	26
Tektronix PostScript interpreter	50
Texas Instruments MicroWriter 17	44
Toshiba TN-7270 print engine	40
Varietyper VT600W	40
XanteAccel-a-Writer 8100	40
XanteAccel-a-Writer	46
REFERENCE WORKS & CD-ROMS	
Cartesia Software MapArt World Data Bank, MapArt Bundle	12
Compton's NewMedia Compton's Multimedia Encyclopedia	10
Interplay Productions Battle Chess, Out of This World	10
SCANNERS & OCR	
Agfa Arcus	28
Hewlett-Packard scanning software	28
La Cie Silverscanner II	28
Light Source scanning software	28
Microtek Lab scanning software	28
PixelCraft Pro Imager 7650C, QuickScan, ColorAccess, Pro Imager 7650, Pro Imager 4520 RS	24
PixelCraft QuickScan	28
SOUND & MUSIC	
Labtec Enterprises speaker system	10
Opcode Systems Opcode MIDI System, Open Music System, OMS 2.0	1
RasterOps MediaTime sound board	28
STORAGE	
Envisio SmartStack 3.5-inch SyQuest drive 11	
Focus Focus 105R, Focus 105R Duet	11
Hardware That Fits RealTech 40-Mbyte Maxtor, 3.6-Gbyte Micropolis	11
MicroNet Raven-800, Q8e/e-1030R, Q8e/e-5560R, NuPORT-III, SBS-B150, Archive DiamondBack, Archive Turbo Python	6
Mirror Tech. SyQuest 3.5-inch drive	11
Toshiba 213-Mbyte drive for PowerBook	11
SYSTEM ENHANCEMENTS	
DayStar Digital 40-MHz Turbo 040, FastCache Turbo	4
Focus Enhancements Focus TurboCards	10
Radius Publishing Station, Publishing Server, Rocket 33, SCSI-2 Booster, DSP Booster	24
TELECOMMUNICATIONS	
Apple Fax/Data Modem, Duo Express Modem, Express Modem	61
Global Village fax modem	41, 61
Shiva NetModem/E	41
UTILITIES	
Alysis eDisk, SuperDiskI, More Disk Space	6
Dantz Development Retrospect Remote 2.0	6
Datawatch Virex	11
Dayna Communications DOS Mounter Plus, NetMounter	4
Fifth Generation Systems Suitcase 2.1.3	4
FWB CD-ROM ToolKit	10
Golden Triangle TimesTwo	6
Golden Triangle DiskMaker	11
Hardware That Fits RealTech Drive Utilities	11
Main Event Rosanne	6
Now Software Now Utilities	11
Stac Electronics Stack for Macintosh	6
Transoft SCSI Director	11
WORD PROCESSING & DOCUMENT TOOLS	
Claris MacWrite Pro, MacWrite II	55
IntelliTools IntelliTalk	12
Microsoft Microsoft Word	55
WordPerfect WordPerfect	55
WordStar International WriteNow	55

## MacWEEK sales offices



## MacWEEK

### SHOWCASE ADS

**Becky Bacon**  
Account Executive (Northwest, Southwest, Bay Area and Nevada)  
(415) 243-3542

**Michele Imfeld**  
Account Executive (Midwest, Mid-Atlantic and Southeast, New England)  
(415) 243-3563

### MARKETCENTER (800) 825-4ADS

### CAREER OPPORTUNITIES (800) 288-HIRE

### DISPLAY ADS

Northwest*	New England***
<b>Matt Sweeney</b> District Sales Manager (415) 243-3545	<b>Karl Elken</b> District Sales Representative (617) 393-3060
<b>André Lengyel</b> Account Executive (415) 243-3565	<b>Jo-Ann Sturtridge</b> Account Executive (415) 243-3575
Midwest**	Mid-Atlantic and Southeast
<b>Thomas J. Lutzke</b> District Sales Manager (312) 214-7324	<b>Cynthia Ramsey</b> Eastern Advertising Director (212) 503-4432
<b>C. Wesley Walton</b> Account Executive (415) 243-3525	<b>Jo-Ann Sturtridge</b> Account Executive (415) 243-3575
Bay Area and Nevada	Southwest****
<b>Peter Longo</b> Western Advertising Director (415) 243-3590	<b>Sara Culley</b> District Sales Manager (213) 351-1832
<b>Sam Failace</b> District Sales Representative (415) 243-3535	<b>Lauren Goldstein</b> Account Executive (415) 243-3511

- \* Includes San Francisco, Alaska and Alberta and British Columbia, Canada
- \*\* Includes Manitoba and Ontario, Canada
- \*\*\* Includes New Brunswick, Newfoundland, Prince Edward Island and Quebec, Canada
- \*\*\*\* Includes Hawaii

## Looking ahead



Issue date	Special section Product Watch	Close for Display ads, MarketCenter, Career Opportunities	Close for Ad Showcase
May 10	Programming	April 29	April 27
May 17	<b>GW Spec. Rpt.</b> Sound	May 6	May 4
May 24	<b>MacWEEK 200</b> CD-ROM	May 13	May 11
May 31	Graphics	May 20	May 18
June 7	<b>Mass Storage Special Report</b> Workgroup software	May 27	May 25
June 14	LC II add-ons	June 3	June 1
June 21	<b>GA Spec. Rpt.</b> Sound	June 10	June 8





# Paring PowerBook 145 price

These may not be the best of times to be taking cheap shots at current events, but the Knife argues that decorum has never been much of a factor in these matters. Therefore, there's little reason to start being delicate

now. The subject under the lamps this week is the disturbing trend in our culture to indulge in hero worship.

In the San Francisco Bay area, for example, commerce almost ground to a halt as followers mourned the loss of a leader. The Knife is will-

ing to give credit where credit is due, but elevating any mortal to this godlike status is unhealthy. Besides, there are other quarterbacks, and it's only fair that Kansas City get a chance to bask in the reflected glory.

But then, change is almost always uncom-

fortable and usually takes a bit of getting used to. Some are still having trouble with the fact that Performa systems are sold without System installation disks. Sure, Apple includes a nearly adequate backup utility, but cutting costs by omitting a handful of floppies seems like false economy at best.

These same people are probably going to be even more appalled in June when Apple unveils the PowerBook 145B, its attempt to capture the mass market it only titillated with the PowerBook 100 fire-sale blowout. The final price of this reworked PowerBook 145 has yet to be determined, but the Knife's sources tell him that Apple will take a page from its Performa marketing plan and omit System installation disks from this cheapest of all PowerBooks.

In addition to copping out on the floppy issue, Apple has further cut costs by redesigning the motherboard to be less expensive to manufacture. Unlike the current PowerBook 145, the 145B will have 4 Mbytes of RAM soldered onto the logic board. As with the 145, RAM capacity will max out at 10 Mbytes.

**Dock maintenance.** When a Mac model fails to live up to sales projections, you can bet that there's someone somewhere hidden away in a Cupertino cubicle measuring the shortfall. In the case of the Duo, the Knife's sources report that Apple is tracking the shortfall at about 30 percent. Now, in theory, the Duo twins should be doing just fine, thank you. The docking concept is both well-conceived and well-executed. Maybe it's the lack of an integrated floppy drive ...

If indeed it's the missing floppy and not the concept of docking that's stymieing sales, then the new dock Apple's planning for all PowerBooks may be a hit. The Knife reports that this "universal" dock will have the features you need to transform your PowerBook into a powerful, expandable desktop machine, including a CD-ROM bay and a PDS slot.

**Both ends of the line.** The announced introduction of the Newton is so close you can almost smell it. Sources insist that Apple's July deadline is absolutely doable, although availability still remains a question mark. And since this initial Newton will be the first member of a family, it needs its own name. The leading candidate at press time was "PowerPad." Based on the features Apple has disclosed so far, calling this mildly featured product a PowerPad verges on the oxymoronic, although the moniker does have a certain inevitability about it.

Meanwhile, down on the PowerPC Mac ranch, the word is that developers are starting to chafe over the continuing absence of Mac-based compilers. Sources allege that the fruits of Apple's PowerPC compiler projects have so far been disappointing. The current solution, compiling on an IBM RS6000 workstation, seems rather onerous now that prototype PowerPC Mac cards are available. It reminds the Knife of the early days of the Mac, when developers complained mightily about having to buy a Lisa to compile their code. □

## Big memory that never forgets.

### Newer's 32-Bit SIMMs

Now ready for the new Mac LC III, Quadra 800 and Centris 610 and 650

Our new high-density SIMMs for the 32-bit Macs have memories so big and reliable, you might feel a compulsion to feed them peanuts. Newer is the first to hit the Mac market with the new 32-bit SIMMs. We were also the first to introduce 4, 8 and 16MB memory in 8-bit SIMMs.

This newest of the Newer trend-setters is available right now in all of those capacities plus a soon-to-be-released 32MB beast of burden that isn't afraid of anything your mouse can do to it. And they all come on a 72-pin card, making them the perfect fit for the new Macs.

So if you're big on memory that never fails, remember Newer's 32-bit SIMMs. They're the most reliable memory you can put in your Mac. And they don't require regular feedings.

- F.A.S.T.™ software bundled with 8MB SIMMs, 16MB SIMMs and all PowerBook memory.
- Video RAM also available.

For quick shipment of 32-bit SIMMs call:

**1-800-678-3726**

Phone: 316/685-4904

Fax: 316/685-9368

**Newer**  
TECHNOLOGY

7803 E. Osie St., Suite 105  
Wichita, Kansas 67207

Newer Technology is a trademark of Spectrum Engineering, Inc. Variable Speed Overdrive, MacSWELL, OPTIMA/128, SCSI-II Dart, and Image Magic are trademarks of Newer Technology. All other product names are trademarks or registered trademarks of their respective holders. ©1993, Newer Technology.

32-Bit Memory From Newer					
	LC III	Quadra 800	Centris 610	Centris 650	LaserWriter Pro 800
32MB	+	+	+	+	+
16MB	+	+	+	+	+
8MB	+	+	+	+	+
4MB	+	+	+	+	+
Video RAM	+	+	+	+	+

Other Memory Products From Newer										
	Plus, SE Classic	Classic II, Performa 200	LC II, LC II, Perf. 400, Color Classic	IIvx, IIfx, Performa 600	II, SE/30, IIfx, IIfx	IIx, IIfx	IIx	Quadra 700	Quadra 900, 950	RoboWriter III, IIfx
20MB Module										
16MB SIMM										
12MB Module										
10MB Module										
8MB SIMM/Mod.										
6MB Module										
4MB SIMM/Mod.										
2MB SIMM/Mod.										
1MB SIMM										
Video SIMMs										

Other Mac performance products from Newer Technology include Variable Speed Overdrive™, MacSWELL™, OPTIMA/128™, SCSI-II Dart™ RAM Drive, FPU-882™ and Image Magic™ DSP.

Add purpose and meaning to your life with the MacWEEK mug. Sources say it isn't too naughty. Find out for yourself at (415) 243-3544, fax (415) 243-3650, MCI (MactheKnife), Internet (mac\_the\_knife@macweek.ziff.com), AppleLink (MacWEEK) or CompuServe/ZiffNet/Mac.



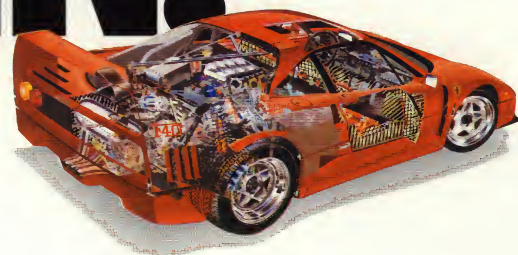
# WE'VE JUST LAPPED CLARIS.®

Canvas™ has never been shy about its reputation for running circles around MacDraw® Pro. But even we are stunned by just how wide the performance gap has grown. Over the last couple years, while the competition's been idling, Canvas has been pouring it on. Winning converts by the thousand. And accumulating a trophy case full of top industry awards, including two MacUser 5-Mice Ratings (no other drawing program's received even one). **O**ne look at the feature differences, and you'll understand why. Canvas offers vastly more powerful text handling tools like binding to curves, shape wrapping, full kerning control, and font-to-Bézier conversion. Unrivaled technical drawing features like auto dimensioning, parallel lines and curves, and a SmartMouse™ drawing aid. Plus sophisticated design/illustration capabilities, including object combinations and object blends. **B**est of all, only Canvas is self-upgrading. Our exclusive Open Architecture allows you to totally customize your work environment — turning existing tools on and off at will, and “plugging in” a steady stream of brand new ones (like our red-hot Design, Imaging, and Utility ToolPAKS™) by simply dragging them into a designated folder. Here's what MacWeek had to say about this feature in their January '93 review of Canvas: “Being able to add more than 40 tools to a program simply by copying files into a folder adds remarkable power to that program. In Canvas' case, it reinforces its position as the best object-oriented drawing program money can buy.” **S**o if you're on the fence about which program to buy, or tired of being stuck in low gear with the one you bought, just get ahold of Canvas. And you'll never look back.

**MACDRAW® PRO,  
ILLUSTRATOR® AND  
FREEHAND™ USERS:  
GET Ahold OF  
CANVAS FOR ONLY  
\$149, WHILE YOU  
CAN. TRADE UP NOW  
BY JUST CALLING  
1-305-596-5644.**

(Have your MasterCard, VISA or Amex card number & expiration date ready!) Or mail your original program disk to the address below, along with your credit card information or check drawn in US dollars on a US bank. Offer limited to the US and Canada, and ends June 30, 1993. Offer subject to change without notice.

# AGAIN.



## CANVAS™

THE HIGH PERFORMANCE DRAWING ENVIRONMENT FROM  SOFTWARE

This entire ad was created and color-separated in Canvas. For more information about Canvas ToolPAKS, call (305) 87th Avenue, Miami, Florida, 33173. ©1993 Deneba Systems, Inc. Canvas™, SmartMouse™, and ToolPAKS™ are trademarks of Corporation. Illustrator® is a registered trademark of Adobe Systems, Incorporated. Freehand™ is a trademark of Aldus Corporation.

596-5644 or FAX: (305) 273-9069. Deneba Software, 7400 Southwest Deneba Systems, Inc. MacDraw® is a registered trademark of Claris



MACUSER  
MAR '91  
MAR '92



MACWEEK  
TARGET  
AWARD  
JAN '92



MACUSER  
APRIL '90  
JAN '92



MACWEEK  
DIAMOND  
AWARD  
JAN '93



INFOWORLD  
DEC '91





# Cross platforms easily.

**New Timbuktu is the easiest way to network Macintosh and Windows computers, so you can share printers, files and screens.**



**Call today for a free  
demonstration video:  
1-800-998-7760 ext. 1.**

**MacUser** 🍌🍌🍌🍌 ½  
**PCWeek Labs Overall Score 4.2**  
**Macworld** ★★★★★  
**LAN Times 5 Nodes**

Moving information between Macintosh® and Windows™ computers used to be quite a feat of skill. Let alone nerves.

But now there's Farallon's new Timbuktu® for Macintosh and Windows.

Timbuktu is the easiest way to create a peer-to-peer network. So, whether you're on a PC or Mac, you can share expensive peripherals like printers. And exchange files quickly and easily.

You also get a unique benefit—remote control. Timbuktu can send a real-time, full-color

picture of your screen over the network so you can control and view it from another Mac or Windows PC. This lets you use your network for new things like collaboration and user support.

Of course, Timbuktu is easy to use and install. You don't need a dedicated gateway or server. And it works with what you've got. Even other networks on NetWare or TCP/IP.

For a free Timbuktu product demo video, just call. It's that easy.

**1-800-998-7760 ext.1\***



**Farallon®**  
**Power to the network.™**

\*Call 1-800-678-5075 for upgrades from Timbuktu and PhoneNET PC (previously AppleShare PC and PhoneNET Talk). Upgrades also available for SitkaTOPS and Carbon Copy.

A copy of Timbuktu is required on each machine on the network. Single- and multi-packs are available.

All trademarks are property of their owners. ©1992 All rights reserved. For customer service, call (510) 814-5000. Or contact us on America Online® or AppleLink® ID: Farallon. CompuServe® ID: 75410, 2702. Internet ID: Farallon@farallon.com.